

REVISTA ECONOMICĂ

Supplement No. 4/2012

Journal of economic-financial theory and practice

CNCSIS reference: B+, Code 478

Frequency: 6 issues/year

Editor

Prof. Dan Popescu, Ph.D., Dr. H.C. of University of Rennes 1, France and Dr.H.C. of Academy of Economic Studies of Moldova

Deputy Editor

Prof. Liviu Mihăescu, Ph.D.

Scientific Committee

Prof. Dan Popescu, Ph.D., Dr.H.C. – Lucian Blaga University of Sibiu, Romania

Prof. Liviu Mihăescu, Ph.D. – Lucian Blaga University of Sibiu, Romania

Prof. Livia Ilie, Ph.D. – “Lucian Blaga” University of Sibiu, Romania

Acad. Prof. Iulian Văcărel, Ph.D. – Romanian Academy

Prof. Lucian-Liviu ALBU, Ph.D. – Director, Institute of Economic Forecasting of the Romanian Academy, corresponding member of the Romanian Academy

Prof. Sergiu Chircă, Ph.D., Dr. hab. – Academy of Economic Studies of Moldova, Honorary Member of the Romanian Academy

Prof. Mircea Ciumara, Ph.D. – Director, National Institute of Economic Research, Romania

Prof. Viorel Cornescu, Ph.D. – The University of Bucharest, Romania

Prof. Francesco d'Esposito, Ph.D. – The Gabrielle d'Annunzio University, Pescara, Italy

Prof. Ion Pohoată, Ph.D. – Alexandru Ioan Cuza University of Iași, Romania

Prof. Robert Labbé, Ph.D. – University of Rennes 1, France

Acad.Prof. Grigore Belostecinic, Ph.D. Dr. hab., Dr.H.C. – Academy of Economic Studies of Moldova

Prof. Alexander Kostov, Ph.D. – Director, Institute for Balkan Studies, Sofia, Bulgaria

Assoc. Nicolae Petria, Ph.D. – Lucian Blaga University of Sibiu, Romania

Assoc. Razvan Șerbu, Ph.D. – Lucian Blaga University of Sibiu, Romania

Lect. Bogdan Mârza, Ph.D. – Lucian Blaga University of Sibiu, Romania

Prof. Carmen Comaniciu, Ph.D. – Lucian Blaga University of Sibiu, Romania

Prof. Emanoil Muscalu, Ph.D. – Lucian Blaga University of Sibiu, Romania

Prof. Ilie Rotariu, Ph.D. – Lucian Blaga University of Sibiu, Romania

Assoc. Mihaela Herciu, Ph.D. – Lucian Blaga University of Sibiu, Romania

Assoc. Silvia Mărginean, Ph.D. – Lucian Blaga University of Sibiu, Romania

Assoc. Claudia Ogorean, Ph.D. – Lucian Blaga University of Sibiu, Romania

Assoc. Cristina Tănăsescu, Ph.D. – Lucian Blaga University of Sibiu, Romania

Assoc. Marian Cristescu, Ph.D. – Lucian Blaga University of Sibiu, Romania

Lect. Dan Alexandru Popescu, Ph.D. – Lucian Blaga University of Sibiu, Romania

Lect. Liviu Florea, Ph.D. – Washburn University, USA

Prof. Eugen Iordănescu, Ph.D. – Lucian Blaga University of Sibiu, Romania

Editorial Board

Prof. Dan Popescu, Ph.D., Dr.H.C. – Lucian Blaga University of Sibiu, Romania
Prof. Liviu Mihăescu, Ph.D. – Lucian Blaga University of Sibiu, Romania
Assoc. Nicolae Eșanu, Ph.D. – Lucian Blaga University of Sibiu, Romania
Assist. Alin Opreana, Ph.D. student – Lucian Blaga University of Sibiu, Romania
Assist. Eduard Stoica, Ph.D. – Lucian Blaga University of Sibiu, Romania
Assist. Florin Martin, Ph.D. student – Lucian Blaga University of Sibiu, Romania

Indexed in:

RePeC
Ulrich`s Periodicals Directory
DOAJ - Directory of Open Access Journals

Lucian Blaga University of Sibiu
No.10, Victoriei Bd.
Postal Code 550024, Sibiu, Romania

Center for Economic Research
Lucian Blaga University of Sibiu
No.17, Calea Dumbrăvii Street
Postal Code 550324, Sibiu, Romania
Phone/Fax: +40 (269) 23.58.79

G.P.E. «Continent»
No.2, Dr. Ion Rațiu Street
Postal code 550012, Sibiu, România
Phone: 40-269-243 210

Copyright

All the copyright of the present volume belongs to the 19th International Economic Conference – IECS 2012, Faculty of Economic Sciences, Lucian Blaga University of Sibiu. All rights reserved.

All the papers of the present volume were peer reviewed by two independent reviewers of The Scientific Committee of the IECS 2012 Conference. Acceptance was granted when both reviewers' recommendations were positive. All papers were presented at the IECS 2012 Conference. The papers of this volume are full responsibility of the authors.

Mail: revista.economica@ulbsibiu.ro
Web: <http://economice.ulbsibiu.ro/revista.economica>

ISSN: 1582-6260

CONSIDERATIONS REGARDING THE PATRIMONIAL INVENTORY IN THE SPIRIT OF EUROPEAN ACCOUNTING REGULATIONS

AVRAM Veronel

Ph. D. Professor, Faculty of Economics and Business Administration, University of Craiova, Craiova, Romania, veronelavram@yahoo.com

ȚOGOE Greti Daniela

Masterand, Faculty of Economics and Business Administration, University of Craiova, Craiova, Romania, greti_togoe@yahoo.com

Abstract: *The accounting rules appeared in late 2009: the Order of the Minister of the Public Finances no. 3055 / October 29, 2009 for the approval of the Accounting Regulations in accordance with the European directives and the Minister of Public Finance Order no. 2861 / October 9, 2009 on the organization and the performance of the inventory of the assets items, liabilities and equity, have made many changes both in terms of how to conduct the inventory and how to find the differences between the existing economic factors and those suggested in synthetic and analytical accounting as reflected in the accounts. The inventory is a complex operation and represents all the operations stating the nature of existence of all the assets, liabilities and equity, in terms of the value or the quantity- value, as applicable, the date on which it is made.*

Key words: inventory, entity, equity elements, the annual accounts book

JEL classification: M 41, M 48

1. Introduction

The inventory, as previous step before drawing up the annual financial statements, primarily aims to establish the real situation of all elements of the nature of assets, liabilities and equity of each entity and the goods and values held by any title, of other legal or natural persons, conferring the annual financial statements the quality to provide an accurate picture of the financial position and performance or non-performance of the entity for the closed financial year. The Minister of Public Finance Order no. 2861 / October 9, 2009 regulates the organization and the performance of the inventory of the assets, liabilities and equity and it abrogates the Minister of Public Finance Order no. 1753/2004 on the organization and the performance of the inventory of assets and liabilities. In accordance with the new order, but also with the stipulation of the Accounting Law 82/1991, amended and republished, the entities are required to carry out an inventory of the of assets, liabilities and equity held in the following circumstances:

- the early stages,
- at least once during the financial year while running, usually at the end of the financial year
- in case of mergers or closures
- upon the request of the monitoring bodies, during the assessment,
- whenever there are indications of gaps or surpluses in the inventory, which can only be determined definitely by inventory;
- whenever there is an inventory handover;
- during the reorganization of the inventory;
- following natural disasters or in cases of force major;
- in other cases provided by law.

Where all the assets of an administrative nature are inventoried, it can replace the inventory held annually, with the approval of the administrator, the officer or person in charge with the management. All the assets should be given under liability or in use, where appropriate, to the employees or to the directors of the entity.

The annual inventory of assets, liabilities and equity is performed usually at the end of the financial year and the results will be reflected in inventory and capitalized on the annual financial statements prepared for that financial year. The entities which, according to the accounting law, have set the year other than the calendar year, organize and conduct annual inventories so that the results of the inventory should be reflected in the financial statements prepared for the set financial year.

2. The development of different inventory proceedings

For the better organization of inventory, the liability belongs to the manager, officer or another person in charge with the management of the entity. To carry out an inventory, the persons responsible have to approve the written procedures tailored to the specific activity, which they transmit to the inventory committees.

A. The first case is the *appointment of a committee / committees of the inventory* by written decision.

The decision specifies the following:

- the composition of the commission (name of the president and of the members of the committee),
- the manner of conducting the inventory,
- the inventory method used,
- the stock subject to inventory,
- the start and the end date of inventory.

The small entities, whose number of employees is low, the inventory can be performed by a single person, and the responsibility for the accuracy of the inventory belongs to the administrator, officer or other person in charge with the management of the entity.

The large entities with more complex activity, the inventory committees are coordinated by a central committee, appointed by written decision. The Central Commission for the Inventory is mandated to organize, train, supervise and control how the inventory transactions are performed. To conduct proper storage of inventory transactions, the inventory committees will be formed of persons economically and technically trained, providing for the accurate and timely inventory of the assets, liabilities and equity, including their assessment according to the applicable accounting regulations. The inventory and the valuation of the assets, liabilities and equity can be performed both with the employees and on service contracts concluded with legal entities or individuals with appropriate training. The manager of the warehouse keepers of the inventories warehouses, the accountants who keep records of that inventory or the internal or statutory auditors may not take part into the inventory committees.

The members of the inventory committees may be replaced only where justified and only by written decision, issued by those who have appointed them. With the entities that do not have an employee who can perform the inventory, it is conducted by the administrators.

B. For the proper conduct of the inventory, the directors, the officers or other persons in charge with the management shall take *measures to create appropriate working conditions for the inventory committee* by:

- organizing the storage of goods grouped by sort-type-dimensions,
- keeping the technical and operational records of the inventory up-to-date, as well as the accounting records for the confrontation of the data from these records;
- participation of the entire inventory committee to work on inventory;
- provides the necessary staff to handle goods that are accounted, i.e. to sort, to place, weighing, measuring, counting, etc.;
- ensuring the participation in the identification of the goods inventoried (sort, price, etc.) and their assessment under the applicable accounting regulations, of the specialists in the entity or outside, at the request of the Chairman of the inventory committee. Such persons are required to sign the inventory lists for the certification of the data;
- endowment of the committee inventory with the technical means of calculation;
- the protection of members of the inventory committee in accordance with the labour protection requirements;
- the security of the doors, windows, gates, etc. from stores, warehouses, etc.

C. *The main organizational measures* within the procedures developed by the responsible people in the entity should be considered and should be taken over by the inventory committee, namely:

- before starting the inventory, a written statement is taken from the manager responsible for assets, stating:
 - he/she manages assets and other storage facilities;
 - besides the entity's assets, he/she manages other property belonging to third parties received with or without documents;
 - has surpluses and gaps in the management whose quantity or value is known;

- has non-received goods or goods to be shipped (delivered), for which relevant documents have been prepared;
- has received or delivered goods without legal documents;
- holds cash or other securities from the sale of goods in its management;
- receipt-release documents which have not been operated in the records or not handed over in the accounting records.
- mentions in the written declaration the type, the number and the date of the last delivery-receipt document of goods to / from the inventory.

The declaration is dated and signed by the warehouse keeper responsible for managing the assets and by the inventory committee. The declaration is signed by the warehouse keeper in front of the inventory committee.

- to identify all the places (rooms) in which there are goods to be inventoried;
 - to provide the closure and the sealing of storage facilities, in the presence of the keeper, when ever the operations are stopped and the inventory is left.

When the goods subject to inventory, managed by one person, are stored in different places or the inventory has several ways to access it, the members performing the inventory must seal all these places and their access stack, except for the place where the inventory has begun, which is sealed only if the inventory does not end in one day. Upon resumption of the works, the committee checks if the seal is intact, otherwise, this shall be recorded in the minutes of the inventory, which is signed by the committee and the keeper, taking the appropriate action. The documents drawn up by the committee remain in the inventory in special facilities (cabinets, boxes etc.) which are locked;

- bar and sign, upon the last operation, the stock records, indicating the date on which the goods have been inventoried, aiming at the documents regarding the receipt or the delivery of goods, existing in the inventory, but are unregistered, have them registered in the stock records and their submission to the accounting, so that the written situation of the inventory reflects reality;
- checks the cash and decides the amount of revenue for that day requesting the cash deposit in the cash desk of the entity (in the retail inventory);
- to check that all instruments and weighing or measuring instruments have been verified and are in good working order;
- if the keeper failed to appear at the date and the time fixed for the commencement of inventory, the inventory committee seals the inventory and communicate this to the central committee or the administrator, officer or another person in charge with the management, according to their procedures. Such persons are required to immediately warn the keeper in writing about the rescheduling of the inventory, indicating the place, the day and the time fixed for beginning inventory operations. If the keeper fails to appear again on the date and at the time fixed, the inventory is carried out by the inventory commission in the presence of the legal representative or another person appointed by written decision, which represents the keeper.

For the proper conduct of the inventory it is recommended, if possible, to cease operations of input-output of goods subject to inventory, while taking appropriate measures in order not to hamper the normal delivery or receipt of goods. If the supply-delivery operations of the goods can not be suspended, a buffer zone has to be created in which to store goods received during the inventory or that you can send goods to customers, those operations being carried out only in the presence of the inventory committee, which will mention this on the documents, "*received during the inventory*" or "*released during the inventory*", as appropriate, to avoid double inventory or omissions.

Throughout the duration of inventory, the schedule and the inventory is displayed in a visible place. The inventory results are entered by the inventory committee in the minutes.

The minutes of the inventory results must contain the following main elements:

- the date of drawing up,
- the full name of the members of the inventory committee,
- the number and the date of the decision appointing the committee to inventory,
- the inventory / inventories
- the date of commencement and completion of the inventory operation,
- the inventory results,
- the conclusions and the proposals on the causes related to the pluses and the gaps found and those responsible,
- the proposals for action related to pluses and gapes noted,

- the volume of the impaired stocks, without movement, slow-moving, hard marketable without assured outlets, proposed measures for their reintegration into the economic circuit,
- proposals for decommissioning of fixed assets, removal from the records of the intangible assets,
- proposals of scrapping the material like the inventory objects and the downgrading or disposal of stocks,
- findings on the retention, storage, preservation, ensuring the integrity of the property
- other aspects related to the inventory.

The proposals contained in the minutes of the inventory committee shall be presented within 7 days since the completion of inventory operations to the manager, officer or person responsible for the management of the entity. This one, with the endorsement of the head of the financial accounting department and the head of the legal department, decides on the settlement of the proposals made, in compliance with the legal dispositions in force.

”The annual account book” is the mandatory accounting document within which the results of the inventory of the assets, liabilities and equity, grouped by their nature as balance sheet items, are written. The assets, liabilities and equity recorded in the annual account book are based on lists of inventories, records of inventory and analytical statements, if any, to justify the content of each balance sheet item. If the inventory takes place during the year, the data of the inventory are updated with the inputs and output from the period between inventories and the conclusion of the financial year, the update is then included in the annual account book. The update operation of the results of the inventory data will be performed so that the financial year should reflect the actual situation of the assets, liabilities and equity.

The filling of the annual account book shall be performed at the same time with the establishment of the balances of all the balance sheet accounts, including those related to the income tax, and the adjustments for depreciation or loss of value, as appropriate. The annual account book can be adapted to the specific needs and entities, subject to the minimum content of information provided to it. The assets, liabilities and equity are included in the annual account book based on the inventory lists, records of inventory and analytical statements, if any, to justify the content of each balance sheet item.

The results of the inventory must be recorded in the technical and operative records no later than 7 business days from the approval of the minutes of the inventory by the administrator, officer or person responsible for the management of the entity. The result of the inventory is recorded in the accounts according to Law no. 82/1991, republished, and in accordance with the applicable accounting rules. Based on the annual account book and the trial balance drawn-up at the end of the year, the balance sheet is drawn up, part of the annual financial statements, whose positions must correspond to the data recorded in the accounts, made in the agreement with the actual situation of the assets, debt and equity, based on the inventory.

The property under the administration of public institutions is inventoried annually, except for buildings, special buildings and other goods in the management of diplomatic missions and consular offices, which are inventoried every 3 years. The national cultural heritage inventory of mobile assets, of book funds, of museum values and of the props of art institutions for shows is performed in the conditions and limits set by the rules developed by the Ministry of Culture, Religious Affairs and National Heritage, with the Ministry of Public Finance. Depending on the specific business entities, ministries and other specialized agencies of the central government whose leaders have the capacity of head officers may draw their own rules on the inventory of the property with the specific features in the administration, including the establishment of exceptions to the general rule for inventories, which are approved by the Ministry of Public Finances

3. Conclusions

The provisions of the Order of the Minister of Public Finance no. 2861 / October 9, 2009 on the organization and the performance of the inventory of the assets, liabilities and equity, applies to companies, corporations / national companies, state companies, national research and development institutes, building societies and other legal entities, public institutions, associations and other bodies with and without profit, natural persons authorised for producing income, sub-units without legal personality, established abroad, which belong to persons previously mentioned which are residents in Romania, as well as the unincorporated subunits from Romania belonging to legal entities established or domiciled abroad, and brings a wide range of changes:

- entities are required to issue their own procedures for inventory, based on rules set in the Order, to be approved by the administrator, officer or another person managing the entity.

- entities may determine by their own procedures the composition of the inventory committee depending on the size and the specific activity, the manner of conducting the inventory, the measures for the smooth organization of these procedures etc.
- persons that gain incomes from self-employment activities and who are obliged, by law, to organize and lead accounts in a simple game, are required to apply the existing provisions for conducting the annual inventory.
- the inventory committee should not necessarily include two people, where entities have no employee; the inventory can be performed by the entity manager.

Not receiving the confirmation of the existing assets to third parties is no longer a tacit acknowledgment, the entities being required to decide within the procedures what to do in such cases.

4. References

- Aslau, T., Almasi, R. (2011) Controlul intern si calitatea infomatiei contabile, *Revista Contabilitatea expertiza si auditul afacerilor*, Nr.1;
- Avram, C.D., Avram, V. (2009) *The Management of Labour Market's Flexicurity in the Bank Sector*, Agora International Journal of Economical Sciences, no. 3;
- Avram, C.D., Avram, V. (2010) *Several considerations regarding the application of the labour flexicurity principles in Romania*, 5th WSEAS International Conference on Economy and Management Transformation (EMT '10), Volume I;
- Avram, M. (2010) *Management contabil*, Ed. Universitaria, Craiova;
- Briciu, S. (2006) *Contabilitate manageriala*, Ed. Economica, Bucuresti;
- Bunget, O.C., Dumitrescu, A.C. (2011) Gestionarea crizei economico-financiare la nivelul IMM-urilor, *Revista Contabilitatea expertiza si auditul afacerilor*, Nr.1;
- Criveanu, M. (2010) *Contabilitate publica*, Ed. Universitaria, Craiova;
- Danescu, T., Todea, N., Prozan, M., Danescu, A.C. (2011) Studiu privind armonizarea rezultatului contabil cu rezultatul fiscal, *Revista Audit Financiar Nr.2*;
- Domnisoru, S. (2009) *Audit si comunicare financiara*, Ed. Universitaria, Craiova;
- Iacob, C. (2009) *Contabilitate de Gestiuine*, Ed. Universitaria, Craiova;
- Muller, V.O., Matis, D., Ienciu, I.A. (2011) Analiza reactiilor internationale la noua abordare propusa de IASB/FASB cu privire la prezentarea performantelor unei entitati, *Revista Audit financiar*, Nr.7;
- Mihai, M., Dragan, C., Ciumag, A., Iota, A. (2011) Considerente privind capacitatea de implementare corespunzatoare a IFRS, *Revista Audit Financiar Nr.8*;
- Mosteanu, T. (2005) *Buget si trezorerie publica*, Ed. Universitara, Bucuresti;
- Tiron Tudor, A. (2002) *Contabilitatea institutiilor publice*, Ed. Dacia, Cluj-Napoca;
- Talpos, I., Avram, A (2011) *Current trends in the mix of fiscal and budgetary policies*, Proceedings on the 1.st Conference on tourism and economic development.

FINANCIAL PERFORMANCE INDICATORS FOR EVALUATION OF LISTED COMPANIES

BALTEȘ Nicolae

*Ph. D. Professor, Faculty of Economic Science, LucianBlagaUniversity of Sibiu,
Sibiu, Romania, baltes_n@yahoo.com*

CIUHUREANU Alina Teodora

*Ph. D. Assistant professor, Faculty of Economic Science, Romanian-GermanUniversity,
Sibiu, Romania, alinaciuhureanu@yahoo.com*

Abstract: *Performance measurement and reporting is important as investors, managers, financial creditors, employees, etc. are interested in knowing how much profit is a certain business there are obviously involved in able to bring. The study of an entity listed on Bucharest Stock Exchange outlines that the persistence of global economic crisis has led to a lower financial performance and consequently to a lower interest of investors in the entity's shares.*

Key words: financial performance, costs, revenue, result, exchange rates

JEL classification: G 32

1. Introduction

Generally, the financial performance reflects an entity's economic potential and financial strength, determined by the analysis of a set of economic-financial indicators, calculated based on the information supplied by the annual financial statements, mainly the profit and loss account. According to approaches provided by IAS/IFRS by financial performances we understand the financial revenues, costs and results of an economic entity.

Expenses are reductions of economic benefits recorded during the financial years as outputs or decreases of the assets or increases of liabilities, which result in reduction of equity, other than those resulting from their distribution to shareholders (par.70.b. "General framework" of IFRS).

Incomes are increases of economic benefits recorded during the financial year as inputs or increases of assets or decreases of liabilities, which result in increases of equity, other than those resulting from shareholders' contribution (par.70.a. "General framework" of IFRS)

Financial results can be translated into profit, if during a determined accounting period, usually a financial year incomes exceed expenses, or into loss, if during a determined accounting period, usually a financial year expenses exceed incomes.

Economic literature generally identifies two big categories of stock indicators: stock growth rates and dividend ratios. Each includes specific indicators for identifying and measuring the financial performance of a listed company.

2. Stock growth rates

Stock growth rates are a significant category of indicators, providing information to shareholders and long-term investors regarding the evolution of the financial year's result with direct consequences on the size of the value market of the entity. Stock growth rates are expressed by specific types, such as: stock capitalization, earnings per share, diluted earnings per share, cash earnings per share, market capitalization ratio, Price to Book Ratio, Price to Sales Ratio.

A. Market capitalization (KB)

It is an indicator expressing the market value of a listed entity, used for the evaluation of its shares and it basically reflects the value given to the entity by the public. The indicator is calculated as the products between the market value of a share (V_{pa}) and the total number of shares issued by the entity (N_a) (P. Brezeanu, A. Boștinariu, B. Prăjișteanu, 2003).

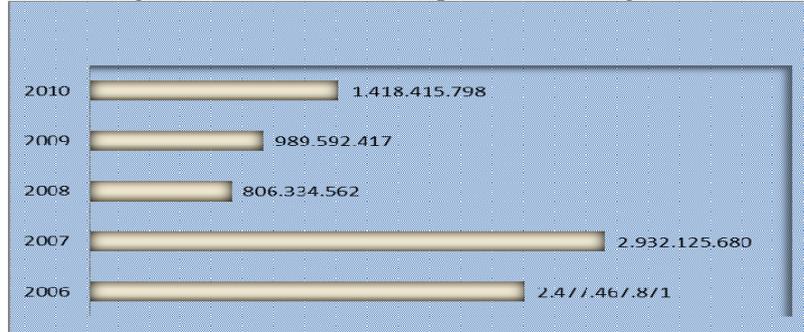
$$KB = V_{pa} * N_a$$

The increasing value of this indicator will represent a gain for any capital investor. The indicator is extremely useful for assessing the liquidity of a listed entity, being able to appreciate the ability to

easily trade securities. The disadvantage of this indicator is that it does not always reflect the entity's real value (especially in case of takeovers and acquisitions). The indicator also serves in assessing the size of a stock exchange, calculated as the amount of stock capitalizations of all listed entities.

At the level of the studied economic entity, the evolution of the indicator during 2006-2010 is shown in figure no.1.

Figure 1: Evolution of stock capitalization during 2006-2010



We notice that in the analysed period there has been a sinuous evolution of the company's market value. If in the two analysed years (2006-2007) we have witnessed a considerable and increasing stock capitalization of the company, in 2008 the indicator recorded the greatest decrease (by 72,52% compared to 2007), caused mainly by the decrease of the market value of a share. A small appreciation of the market value of shares happened in 2010, when the indicator's value was fewer than 50% of the level registered in 2007.

B. Earnings per share (RAB or EPS)

The purpose of the information regarding earnings per share is to evaluate the degree of participation of each ordinary share of an entity to the entity's performance during the reporting period.

The value of earnings per share for the profit or loss attributable to the shareholders of an entity is calculated by dividing the profit or loss attributed to the shareholders of the entity to the weighted average of common shares outstanding during the financial year:

$$EPS = \frac{Rn}{Na}$$

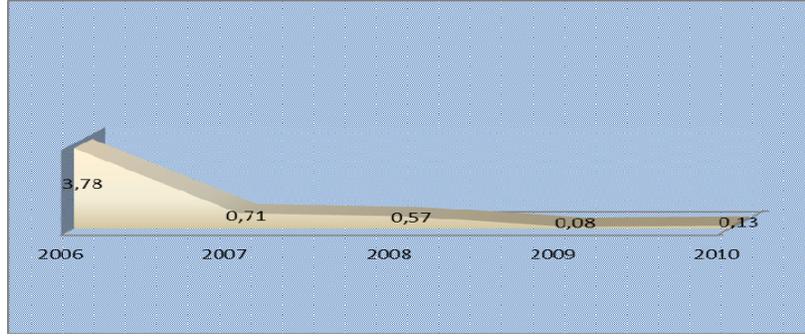
where Rn – net income, Na – number of ordinary shares.

The high level of this indicator may outline high confidence of investors in the management of the company and a low level, the investors' lack of confidence. For the analysed economic entity, EPS evolution is shown in table no.1, with graphical representation in figure 2.

Table 1: Determination of EPS

Period	2006	2007	2008	2009	2010
Rn	277.259.581	52.043.832	41.943.077	6.135.590	9.557.424
Na	73.297.866	73.303.142	73.303.142	73.303.142	73.303.142
EPS	3,78	0,71	0,57	0,08	0,13

Figure 2: Evolution of EPS during 2006-2010



We notice a low level and a decreasing evolution of EPS throughout the entire analysed period, from 3,78% in 2006 to only 0,13% in 2010, caused by the decrease of net income of the financial year from the entire analysed period.

C. Cash earnings per share (Cash EPS)

The indicator shows the amount of cash produced by a share during a financial year and is calculated as the ratio of cash flow generated by the operating activity (operation cash flow - OCF) and the number of common shares (Na) (A. Duțescu, 2000).

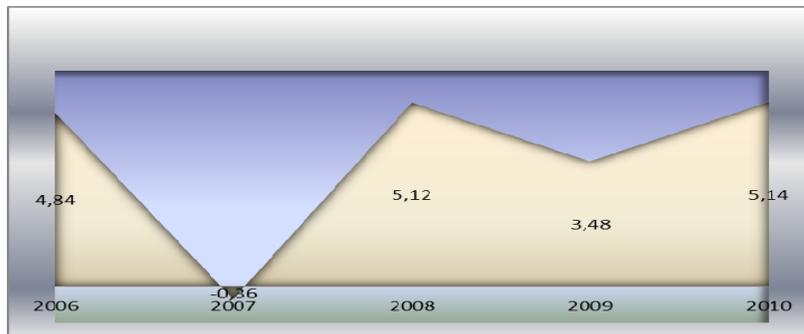
$$CashEPS = \frac{OCF}{Na}$$

We appreciate that this indicator is much more relevant than EPS, since the net income of the financial year used for calculating it is much more impure and much handier than cash flow. For the analysed economic entity, the evolution of the indicator is shown in table 2, and graphically represented in figure 3.

Table 2: Determination of Cash EPS

Period	2006	2007	2008	2009	2010
OCF	354.453.247	-26.049.701	375.162.966	254.775.293	376.419.390
Na	73.297.866	73.303.142	73.303.142	73.303.142	73.303.142
Cash EPS	4,84	-0,36	5,12	3,48	5,14

Figure 3: Evolution of Cash EPS during 2006-2010



We notice a sinuous evolution of Cash EPS throughout the analysed period. Therefore, in 2006, the level of the indicator was 4,84 lei/share, in 2007, the level was totally inappropriate (-0,36 lei/share), caused by the high level of payments compared to that of revenues. The situation is getting better in the following years, the level of the indicator reaching proper rates, especially in 2010 (5,14 lei/share), as a result of cash flow increase from the operating activity.

D. Stock capitalization ratio (PER)

The indicator shows on one hand the market performance of a share, namely the amount an investor is willing to pay to receive one monetary unit of the entity's profit and, on the other hand, the time required for a shareholder to recover the invested capital. A high value of the indicator shows a high level of expectation of investors from the entity's profit evolution. A low level of PER indicator may attract investors into buying and holding shares. From the static point of view, a share with a low PER is better than one with a high PER, however, in terms of the purchase price, a share with a high PER may be more profitable than one with a low PER (taking into consideration the increase or decrease of income of the share in the future). The indicator turns out to be extremely useful especially if it based on future projections, rather than being based on historical information. It is calculated as the ratio between the market value of a share (Vpa) and earnings per share (EPS).

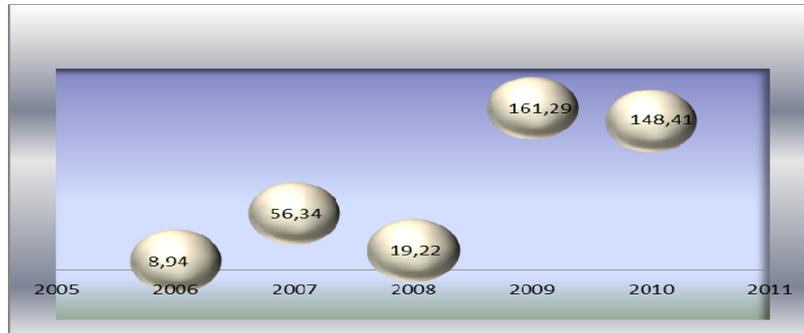
$$PER = \frac{Vpa}{EPS}$$

For the economic entity under study, the evolution of the indicator is presented in table 3, with graphical representation in figure no.4.

Table 3: Determination of PER

Perioada	2006	2007	2008	2009	2010
Vpa	33,8	40	11	13,5	19,35
EPS	3,78	0,71	0,57	0,08	0,13
PER	8,94	56,34	19,22	161,29	148,41

Figure 4: Evolution of PER during 2006-2010



We notice an increasing evolution of PER during the analysed period, with a maximum level of 161,29 lei in 2007. This means that the company's shares are expensive compared to the recovery of investment period, but the value of the indicator should also be analysed in terms of future profitability rate of a share.

E. Price to Book Ratio (PBR)

The indicator is calculated as the ratio between the market value of a share (Vpa) and its book value (Vca) specifically highlighting the value that the financial market gives to the management of an entity.

$$PBR = \frac{Vpa}{Vca}$$

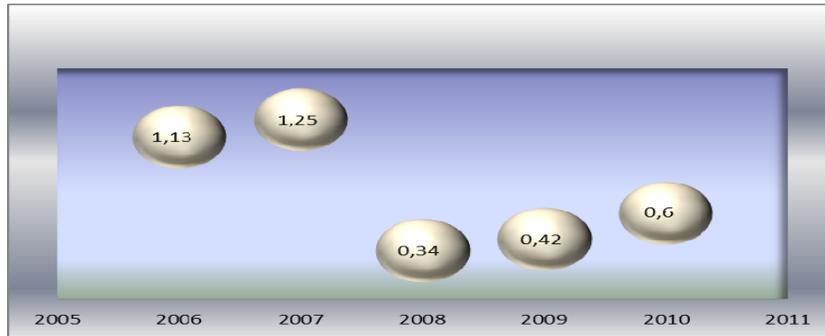
A properly managed economic entity, with high growth opportunities in the future, should have a market value of a share equal or superior to the book value. When the shares of an entity are traded for a market value lower than their book value, then the market considers that its assets are overvalued and that

their profitability is very low, being recommended either the sale of the shares, or the change of management. For the studied entity, the evolution of the indicator is presented in table 4 and figure 5.

Table 4: Determination of PBR

Period	2006	2007	2008	2009	2010
Vpa	33,8	40	11	13,5	19,35
ANC	2.199.136.207	2.350.775.629	2.367.708.101	2.351.632.024	2.355.441.697
Na	73.297.866	73.303.142	73.303.142	73.303.142	73.303.142
Vca	30,00	32,07	32,30	32,08	32,13
PBR	1,13	1,25	0,34	0,42	0,60

Figure 5: Evolution of PBR during 2006-2010



If in 2006 and 2007 the ration between the market value of the entity’s shares and their book value was higher than a unit, beginning with 2008, due to the decrease of turnover and implicitly of the profit, we have witnessed a decrease of this value, which became less than a unit.

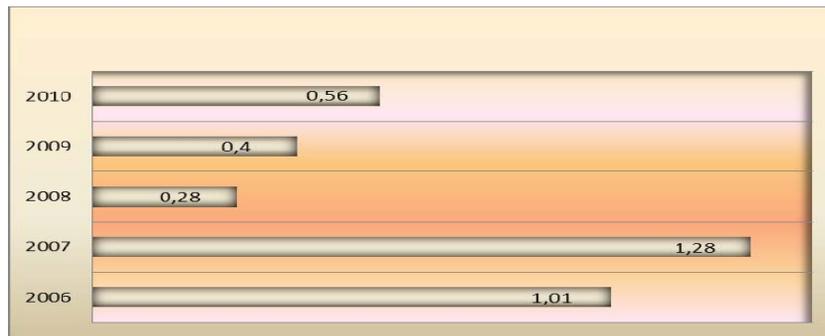
F. Price to Sales Ratio (PSR)

The indicator is used to identify unprofitable investments, being also useful in assessing the shares of those entities that are unprofitable or which have low profits. It is calculated as the ratio between the market price of the share (Vpa) and the net turnover per share (CAna) or as the ratio between stock capitalization (KB) and the net turnover (CAn):

$$PSR = \frac{Vpa}{CAna} \text{ sau } PSR = \frac{KB}{CAn}$$

For the studied economic entity, the evolution of the indicator is shown in figure 6.

Figure 6: Evolution of PSR during 2006-2010



A decreasing trend of PSR can be noticed during the analysed period, which demonstrates that the entity, especially in 2008, had a low margin of its shares’ value.

3. Dividend ratios

This category of indicators is important both for the shareholders, interested in obtaining dividends and short-term investors of an entity, interested in getting a high level of short-term profitability for the purchased shares. Dividend ratios include specific indicators, such as: dividend per share, dividend yield or capitalization rate of dividend and dividend coverage ratio.

A. Dividend per share (DIVA)

This indicator shows the level of the dividend per one share. It is calculated as the ratio between the value of dividends distributed to shares from the net income of the financial year (DIV) and the number of common shares outstanding (Na).

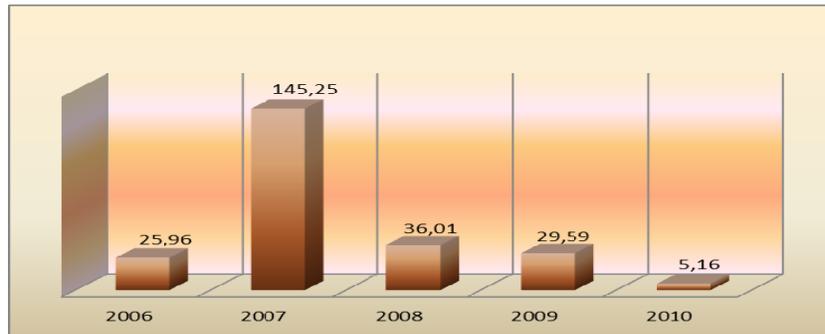
$$DIVA = \frac{DIV}{Na}$$

For the studied economic entity, the evolution of the indicator is shown in table 5 and figure 7.

Table 5: Determination of DIVA

Period	2006	2007	2008	2009	2010
DIV	19.031.449	106.471.084	26.399.327	21.691.255	3.783.978
Na	73.297.866	73.303.142	73.303.142	73.303.142	73.303.142
DIVA	25,96	145,25	36,01	29,59	5,16

Figure 7: Evolution of DIVA during 2006-2010



We notice a decreasing trend of DIVA, beginning with 2008, as a result of the low net income registered by the entity.

B. Dividend yield (RDIV)

The indicator measures the profit made by the shareholders from investment in the entity's shares. It is calculated as the ratio between the dividend per share (DIVA) and the market value of a share (Vpa).

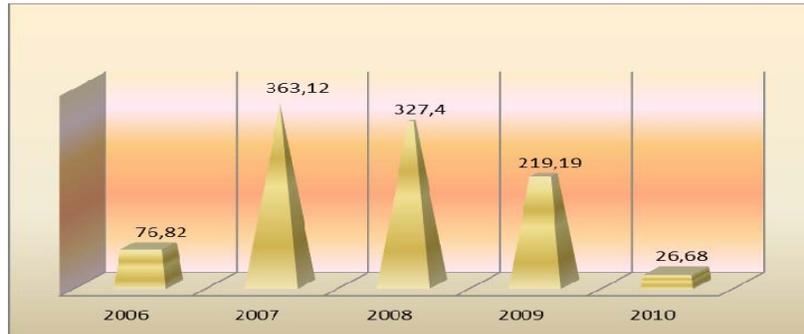
$$RDIV = \frac{DIVA}{Vpa}$$

Shareholders prefer a higher value of the indicator, namely maximizing the effects obtained in the form of dividends incumbent per invested share, related to the shareholders' effort materialised in the price paid for the acquisition of a share.

For the studied economic entity, the evolution of the indicator is presented in table 6, with graphical representation in figure 8.

Table 6: Determination of RDIV

Period	2006	2007	2008	2009	2010
DIVA	25,96	145,25	36,01	29,59	5,16
Vpa	33,80	40,00	11,00	13,50	19,35
RDIV	76,82	363,12	327,40	219,19	26,68

Figure 8: Evolution of RDIV during 2006-2010

We notice a sinuous evolution of the indicator, namely an increase of it in 2007-2008 (363,12 lei, respectively 327,40 lei), followed by an accelerated decrease of the dividend yield to only 26,68 lei in 2010. Therefore, the earnings made by shareholders from investments in the entity's shares is in continuous decline.

C. Dividend coverage ratio (RADIV)

The indicator measures the proportion of net profit (Rn) distributed to shareholders in the form of dividends (DIV) and it is determined as ratio between the two elements:

$$RADIV = \frac{Pn}{DIV}$$

A high level of this indicator reflects a strong dividend policy combined with a reduced policy of self-financing. For the short-term, a high value of the indicator may seem attractive to investors, but for the long-term, it does not provide a sustainable development of the business. For the analysed economic entity, the evolution of the indicator is presented in table 7 and figure 9.

Table7: Determination of RADIV

Period	2006	2007	2008	2009	2010
Pn	277.259.581	52.043.832	41.943.077	6.135.590	9.557.424
DIV	19.031.449	106.471.084	26.399.327	21.691.255	3.783.978
RADIV	1456,85	48,88	158,88	28,29	252,58

Figure 9: Evolution of RADIV during 2006-2010

During the analysed period, we notice a decreasing trend of RADIV, from 1,456,85 lei in 2006 (maximum level), to 28,29 lei in 2009 (minimum level), respectively 252,58 lei in 2010. Although decreasing compared to the beginning of the period, we may conclude that the dividend policy practiced by the entity appears to be moderate in relation to its financing possibilities.

4. Conclusions

The study conducted in a Romanian economic entity, listed on Bucharest Stock Exchange leads us to the conclusion that starting with 2008, its financial performance has reduced substantially, the main cause being the entity's low turnover and implicitly of the profit. If in 2006-2007 the company showed high attractiveness for investors, evidenced by the level of stock indicators, beginning with 2008, due to the persisting economic crisis, we have been witnessing a serious drop in value of the indicators regarding the entity's financial performance and implicitly a lower interest shown by investors.

5. References

- Balteş N. (2010): *Analiză și diagnostic financiar*, Editura Universității „Lucian Blaga” din Sibiu
- Brezeanu, P, Boștinăru A, Prăjișteanu B. (2003) *Diagnostic financiar. Instrumente de analiză financiară*, Editura Economică, București
- Brillman J. (1998): *Les meilleures pratiques de management au coeur de la performance*, Les Editions d'Organisation, Paris
- Ciuhureanu A, T. (2009): *Management financiar*, Editura Universității „Lucian Blaga” din Sibiu
- Feleagă N., Malciu L. (2007) *Contabilitate financiară. O abordare europeană și internațională*, vol. I, Editura Economică, București
- Greuning H. V., Koen M. (2003): *Standardele Internaționale de Contabilitate – Ghid practic*, Editura Irecsson, București
- Halpern P., Weston J.F., Brigham E.F. (1998): *Finanțe manageriale*, Editura Economică, București
- Jianu I. (2007): *Evaluarea, prezentarea și analiza performanței întreprinderii – o abordare din prisma Standardelor Internaționale de Raportare Financiară*, Editura CECCAR, București
- LalaPopa I., Miculeac M. E. (2009): *Analiză economico-financiară – elemente teoretice și studii de caz*, Editura Mirton, Timișoara
- Păvăloaia W., Păvăloaia D. (2009): *Analiză economico – financiară*, Editura Tehnopress, Iași
- Petrescu S. (2008): *Analiză și diagnostic financiar – contabil – ghid teoretico – aplicativ*, Ediția a II-a, revizuită și adăugită, Editura CECCAR, București
- Stancu I. (2007): *Finanțe*, ediția a patra, Editura Economică, București
- Vasile I. (2006): *Gestiunea financiară a întreprinderii*, Editura Meteor Press, București

THE FINANCIAL IMPLICATIONS OF IMPLEMENTING THE NATIONAL REFORM PROGRAM IN ROMANIA

BALTEȘ Nicolae

Ph. D. Professor, Faculty of Economics /Department Finances Accounting, LucianBlagaUniversity of Sibiu, Sibiu, Romania, baltes_n@yahoo.com

ISPAS Roxana

Ph. D. Assistant professor, Faculty of Economics and Business Administration/Department Finance, Banks and Economic Analysis, University of Craiova, Craiova, Romania, roxispas1972@yahoo.com

Abstract: *The National Reform Program 2011-2013 (NRP) represents the platform framework for defining and implementing the economic development policies of Romania according to the policies of the European Union (EU), having as priorities the achievement of an economy which is intelligent, sustainable and favorable to inclusion with high level of labor employment, productivity and social cohesion. The judicious use of this instrument by undertaking the necessary and realistic reforms in the European context of efforts to achieve the objectives of Europe 2020 Strategy allows concerting the national intercessions for modernizing the Romanian economy and society and sustains the social and economic convergence with the other member states of EU.*

Key words: reform, objectives, strategy, development, financial imbalance

JEL classification: G 01, G 31, H 62

1. Introduction

Starting from the strategy's objectives, through the National Reform Program, Romania has established its own priorities and objectives which set the framework and directions of sustainable economic development, starting from the strategy's objectives. The mobilization of the financial and institutional efforts doubled by the achievement of a broad consensus for the whole society was the decisive factors for achieving these objectives and national priorities.

Thus, the new vision, more clear and dynamic, on Romania's economic growth and on the standard of living, led to a more productive collaboration between the central public administration, Parliament, social partners, associative structures of the local public administration, NGOs, academic environment and international financial institutions, in order to implement the necessary reforms for correcting the financial imbalances and resuming the economic growth.

Naturally, NRP 2011-2013 continues the reforms undertaken in NRP 2007-2010 and suggests new reforms derived from the characteristic of the objectives of the Europe 2020 Strategy and of the documents that concern the Growth Annual Analysis and the Euro Plus Treaty. Under these circumstances, NRP 2011-2013 will also include, among the new identified actions, a part of the actions which are already being implemented (for example, those referring to the conditions which must be obeyed by Romania in relation with the International Monetary Fund and other international institutions).

At the same time, the elaboration and implementation of NRP 2011-2013 coincide with the period of economic recurrence, the economic crisis being seen as a major opportunity of implementing the measures of structural and budgetary reform which are to increase the capability of the Romania economy of coping on long terms with the global competitive pressures attracting direct foreign investments and creating new jobs.

Romania's response to the effects of the economic crisis and the recession of economy came true in adopting, in 2010, a consolidated budget having as a main coordinate the limitation of both the internal and external deficit growth. At the same time, the government focused its efforts on identifying some short term solutions, meant to diminish the macroeconomic imbalances.

For this purpose, the main measures in the field of fiscal and budgetary policy aimed at reducing the deficit towards the level established by the *Stability and Growth Treaty* and directing the resources towards investments which sustain the economic growth. The comprehensive economic program agreed with the International Monetary Fund, the European Community and other international financial institutions (the World Bank, the European Bank for Reconstruction and Development) defines, in a road map, a set of key objectives of consolidating and reforming the fiscal administration, supervising the financial sector and of structural reform (labor market, education, environment infrastructure). According

to the *Governing Program, Convergence Program, Financial and Budgetary Strategy Governing Program, Convergence Program, Financial and Budgetary Strategy* and taking into consideration the EU objectives stipulated in *Europe 2020 Strategy*, Romania's economic strategy on medium terms aims at the following objectives:

- a. resuming the process of economic growth and creating new jobs;
- b. adjusting the public and current account deficit to values which allow their financing and going on with the process of disinflation;
- c. protecting the categories of population most affected by the economic crisis;
- d. improving the predictability and the fiscal policy performances on medium terms and maximizing and efficiently using the EU funds;
- e. ensuring the long term sustainability of the public finances;
- f. restructuring and making efficient the activity of the public administration;
- g. firmly implementing the engagements assumed within the multilateral external financial agreement with the International Monetary Fund, European Commission, the World Bank, as well as with other international financial institutions;
- h. implementing the prioritized reforms on short and medium terms and the specific measures in order to achieve the national objectives established in the context of Europe 2020.

On short terms, the government's priorities remain further on connected to boost the economy, creating jobs and ensuring the sustainability of the public finance. This way, the growth of the efficiency and transparency of the public administration, together with the improvement of the business environment apply in the category of strategic priorities on short terms, meant to contribute directly to ensuring the conditions for achieving the targets assumed in the context of Europe 2020.

In its whole, the *national Reform Program* will stimulate the competitiveness, productivity and Romania's growth potential, the social, territorial cohesion and the economic convergence, all these following up the economic reduction of delays concerning the economic development towards other EU member states.

If we analyze the macroeconomic scenario for 2010-2014, the economic reestablishment in EU, although still fragile, makes progress in a faster rhythm than it was anticipated. For 2011, the economic nature of EU demonstrated the fact that the more favorable external environment impelled the EU exports especially from the economies directed towards export. Besides exports, which will further on sustain the reestablishment, one also expects a balancing of the domestic demand.

The economic activity on a world plane had a revival on the last semester of the year 2010 and the basic indicators highlight the acceleration of the economic growth rhythm. The global economy outran the critical point of crisis and in 2010 there was record a recovery of demand in many of the advanced economies and also in the emergent economies and in those now developing. Thus, the world GDP increased with 4.5% and that of EU27 and from the Euro Area with 1.8%, respectively 1.7%. The scenario for the next years takes into consideration the growth of the gross domestic product both on a world level as well as in EU27, simultaneously with the growth of the world imports and Romanian exports market.

Continuing the trend of reducing the domestic demand, in Romania the economic decline recorded in 2009 went on also in 2010, when the **gross domestic product** diminished by 1.3%, which represented a better evolution than it had been anticipated through the forecast in the autumn of 2009.

There was a positive thing the fact that in 2009 there was simultaneously recorded the adjustment of the budgetary deficit from 7.3% of GDP to 6.0% and the maintenance of the current account deficit in the sustainability area, respectively 4.2% of GDP for the second year consecutively. Year 2010 can be considered as the year of boosting the industrial production which increased with 5.5%, totally recovering the decrease in 2009, but having a structure better adapted to the demands of the external and domestic market, as well as the year with the greatest exports of goods, outrunning even the level before the crisis.

In the context of budgetary situation, of that on the labor market, but also of the GDP's structure on the demand side, the crisis' effects upon Romania's potential GDP are mixed: on one side the level is affected in 2009 when it is reduced with 4.7% (the work factor contributing with -1.2 percentage points, the whole productivity of the factors with -5.0 percentage points, and the capital with 1.5 percentage points) and on the other side, the growth rates on medium terms slow down from values of over 6% in the assessments before the crisis to rhythms of over 3% for the period 2011-2014.

The macroeconomic framework for the year 2011 takes into consideration the fact that the economic and financial evolutions will improve and economy will resume the sustainable growth, so that there would be possible an increase of the GDP with 1.5%.

On medium terms, respectively the period 2012-2014, the forecast scenario foresees the acceleration of the economic growth with rhythms between 4.0-4.7%, which is to recover the decreases in 2009-2010 due to financial and economic crisis and to ensure the reducing of the deficits from the more developed EU member states (*catching up*). The scenario is based on the improvement of the activity in all the economy's sectors, especially in the industrial branches with a high potential of export, as well as in the construction sector which can capitalize on the existing infrastructure needs in all areas.

Table 1: Economic Growth

	2010	2011	2012	2013	2014
Real GDP	-1.3	1.5	4.0	4.5	4.7
Nominal GDP	3.1	5.5	8.9	9.1	9.3
<i>The Components of the Real GDP</i>					
The expenses of the private consumption	- 1.7	1.9	3.9	4.2	4.4
The expenses of the governmental consumption	- 3.6	- 1.1	1.5	1.8	1.9
The gross formation of the fixed capital	- 13.1	3.4	5.8	7.8	8.5
Exports of goods and services	13.1	8.1	9.7	9.5	9.6
Imports of goods and services	11.6	7.1	8.3	8.7	9.5
<i>Contributions to GDP growth (percent)</i>					
Final domestic demand	- 5.2	1.8	4.1	7.8	5.1
Change in stocks	4.1	- 0.2	- 0.2	- 0.2	- 0.2
Net export	- 0.2	0.0	0.1	0.0	- 0.2

Source: National Prognosis Commission

The domestic demand will be the engine of this evolution with rhythms of increasing the gross formation of fixed capital of over 5.8% up to 8.5% in 2014. While the expenses of the private consumption will grow with rhythms of about 4%, in terms of available revenue growth and trust in the economic climate, the expenses with the governmental consumption will start to record positive dynamics, after two years of reduction of their share in the gross domestic product and the improvement of the efficiency of the budgetary expenses. The exports and imports of goods and services will be maintained at high levels, recording growths – in real terms – of over 7%.

For the period 2011-2014 it is estimated an average annual rate of growth of **exports of goods** by 13%. The domestic economic activity will require additional imports increasing at an average annual increase of 11.6%. As a consequence, the FOB-FOB trade deficit share in GDP will reach a downward to 2% in 2014.

Table 2: The Foreign Trade and the Current account

- mil. Euros -

	2010	2011	2012	2013	2014
Export FOB	37,294	42,910	49,135	55,865	62,850
- annual percent change, %	28.2	15.1	14.5	13.7	12.5
CIF import	46,802	52,310	58,530	65,320	72,695
- annual percent change, %	20.1	11.8	11.9	11.6	11.3
FOB-FOB trade balance	-5,905	-5,370	-4,890	-4,425	-4,250
FOB-CIF trade balance	-9,508	-9,400	-9,395	-9,455	-9,845
Current account deficit	-4,969	-5,635	-6,715	-6,505	-7,030
- % of GDP	-4.1	-4.3	-4.8	-4.2	-4.1

Source: National Prognosis Commission

The current account deficit will remain within sustainable limits and are to represent 4.1% of GDP in 2014. Current transfers' surplus will be used to offset, just like up to the present, the negative impact of the trade balance deficit and the balance of income.

In 2011, the trend of reducing the **inflation** will be visible at the level of inflation from the end of the year, recording a decrease of more than 3 percentage points.

For the period 2012-2014 it is forecasted an intensification of the process of reducing the inflation in the context of maintaining the definite behavior of the monetary policies as well as of the other components of the economic policy (financial, income). The promotion of a cautious salary policy and the continuation of the structural reforms will maintain the process of disinflation on a sustainable trajectory. Thus the inflation rate is going to go down to the level of 2.5% (December / previous year December) in 2014 with an annual average of 2.8%.

Table 3: Inflation

	- % -				
	2010	2011	2012	2013	2014
Inflation at the end of the year	7.96	4.8	3.0	2.8	2.5
Average annual inflation	6.09	6.5	3.5	3.2	2.8

Source: National Prognosis Commission

Starting with 2011, continuing to resume the economic growth, it is expected for the **labor force** to improve, creating the conditions for increasing the number of jobs and for improving the employment for the 20-64 years old population, with a view to achieving the objective assumed in Europe 2020 Strategy.

Table 4: Labour Force

	- % -				
	2010	2011	2012	2013	2014
Employment rate for the 20-64 years old population	63.3	63.9	64.3	64.7	65.5
- men	70.8	71.6	72.0	72.4	73.1
- women	55.9	56.1	56.5	57.0	57.8
Unemployment rate (according to BIM)	7.3	6.4	6.2	6.0	5.8

Source: National Prognosis Commission

It is also expected for the **number of the unemployed** (according to BIM) to go on a descending slope, so that the unemployment rate diminish to 5.8%, a lower level than the one in 2010 with 1.5 percentage points.

2. Conclusions

The forecasted macroeconomic evolution is exposed to a series of **potential risks** which can slow down the estimated trend:

- smaller increases or even decreases of the world economy, inclusively in the economies in the European Union which would diminish the demand for Romanian exports;
- the low a absorption of the European funds which would imply a low level of investments;
- the spreading of some potential negative effects due to the financial strains accumulated in some member states. The difficulties connected to the external public debts of some member states of the Euro Area can transfer the problems in other EU states. The financial consolidation in the countries with high budgetary deficits can induce the reduction of domestic demand;
- the maintenance of a limited loan with an effect on consumption;
- the increase of international prices (energetic resources, raw materials, agricultural products);
- the manifestation of some unfavorable climate conditions for agriculture.

3. References

- Avram C. D.; Avram Al.; Avram M.; IspasR.(2009) *The Management of Labor Market's Flex Security in the Bank Sector*, Agora International Journal of Economical Sciences (AIJES), Volume: III No: I. Available at: http://www.economicaljournal.univagora.ro/?page=article_details&id=1; http://www.economicaljournal.univagora.ro/?page=author_articles&id=300; <http://journals.indexcopernicus.com/karta.php?action=masterlist&id=5045>.

- Donath L. (2004) *Public Finances and Taxes Management Elements*, Marineasa Publishing House, Timisoara.
- Ispas R.; SimionD. (2010) *The Financial Management of the Small and Medium Sized Companies in Romania*, Annals of the University of Craiova, Economic Sciences Series. Available at: <http://ejournals.ebsco.com/login.asp?bCookiesEnabled=TRUE>
- Lizzeri, A (1999) *Budget Deficits and Redistributive Politics.Review of Economic Studies*.
- Mazilu M.; IspasR. (2010) *The New Economy and the Economy of Tourism*, Universitaria Simpro 2010, pg. 67-72. Available at: http://www.upet.ro/webeditura/formular_pagweb.htm
- Moşteanu T. (2005) *Public Finances*, University Publishing House, Bucharest.
- Mutaşcu M.I. (2006) *Elements of Fiscal Theory*, Mirton Publishing House, Timisoara.
- Tulai, C-tin (2005) *Compared Taxation and Fiscal Harmonisations*, Science Book House, Cluj Napoca.
- Ţăţu, L. (2010) *Taxation from Law to Practice*, All Publishing House, Bucharest.
- Văcărel, I. (coord.) (2009) *Public Finances*, Didactic and Pedagogic Publishing House, 6th Edition, Bucharest
- <http://www.mfinante.ro>
- <http://anaf.ro>
- <http://www.fin.gc.ca>
- <http://www.lagomedia.net>

RETAIL BANKING TRANZACTION INNOVATION

BANACU Cristian

*Ph. D. Professor, Faculty of Management, Academy of Economic Studies, Bucharest, Romania,
cristian.banacu@gmail.com*

GRUDNICKI Bogdan

*Ph. D. Student, Faculty of Management, Academy of Economic Studies, Bucharest, Romania,
bogdan.grudnicki@gmail.com*

Abstract: *The following article is a pleading for banking retail transactions revolution driven by the technical development and the constant need to have a balance between safety, speed and costs of operations. The main elements for the success of innovative ways to perform banking transactions are: customer behaviour, sensibility towards transactions safety and efficiency.*

Key words: bank, innovation, efficiency, transactions

JEL classification: E 42

1. Introduction

The idea of this article was driven by a quote of Albert Einstein that said: “In times of crisis, only innovation is more important than knowledge”. So we might go a little further and say that the most important resources in the world are the human minds and the whole “industry” responsible for their “grinding”. Innovation does not necessarily mean immediate changes, but continuity, improvement, efficiency and finally evolution.

The global economy is more and more present in the virtual environment and important amounts of goods and services are traded online. The market concept is changing since the appearance of scriptural (virtual money) in the early 80's, allowing transactions to be made more easy and safe without using cash between banks. Behind the scriptural money appearance lays the ever increasing information technology power, that very soon made possible trading without money for companies and individuals in the late 80's. Following decades are marked by the appearance of credit/debit cards – early 90's and the internet boom between 1990 and 2000. All of the above mentioned changes were possible due to innovations in different areas, from computer microchips to marketing advertising campaigns. It is interesting to have a glimpse of the future by overlooking the evolution of retail banking transactions.

2. Retail Banking Transactions

The most common banking transactions used nowadays are made using cash, credit/debit cards and online banking.

A transaction means an exchange of currency, goods and services between two parties (most frequent: seller – buyer and sometimes donor – acceptor).

Cash transaction between two parties might involve or not the banking system directly, but depend on it due to the fact that in a wider expense, the central banks are finally the legal tenders of coins and banknotes, so in some extreme cases, central banks have the right to limit cash and non cash transactions between parties. (e.g. in the case of restrictions imposed to Iran in 2011, The Federal Reserve decided that the U.S. Dollars will not be involved in any transaction linked to Iran. Also, European Central Bank, decided that the Euro currency is restricted to involvement in transactions affecting the above mentioned Country. Sweden is the first country that introduced the banknotes in Europe and now reported that only 3% of the entire transactions made in its territory was cash based.

Cash transactions are charged more by the banks trough fees and commissions because cash handling is expensive (storage, transport, processing, insurance). In these respect, banks encourage trough lower transaction costs the migration towards alternative channels such as: cards, ATM's, POS's, online banking;

The transactions made trough Debit and Credit Cards are not possible without the involvement of at least one bank, card issuers like: Visa, Master Card, American Express and also communications

providers. With all the efforts of involved entities, the cards payments systems are vulnerable to fraud and sometimes, due to technical problems, the cards transactions are not possible.

The banking cards fast development in the past ten years generated an entire infrastructure, a network of servers, ATM's, POS and other complicated and expensive machines.

Online Banking appeared as a complementary service for banking accounts and cards owners, allowing them to pay from urgent invoices to concert tickets and almost everything available on the internet, by using their computers or smart phones as a transaction platform from their own accounts to third parties. On-line banking usage is sometimes complicated due to the many steps necessary to be carried out in order to make a simple payment, mostly from security or regulations reasons. (e.g. for a simple payment, the user needs to open his computer, establish a *secured* internet connection, open the online banking application, enter his user name and automatically generated password, wait for signing in to the application, select the account do be disbursed, enter the amount, enter the account number, account holder name and personal identification number, choose the priority of the transaction, validate the payment and after that he must sign out from the on-line application or will be automatically signed out after few minutes of inactivity); The steps succession sometimes might get jammed or disrupted and so the time necessary to perform a transaction increases.

3. Innovating Retail Banking Transactions

As technologies evolve, the current needs and existing solutions to satisfy them are more and more improved, in a race to perform the current tasks more efficiently, the sellers and buyers involved in transactions are “dragging” each other in to a competition for evolution. Nowadays we do not imagine a store without POS attached to their cashiers, ATM machines in the proximity or a website without online payment facilities. This happened for several reasons, but the main ones are the savings of time and money.

Who would guess that using an auto-motive Japanese innovation made a decade ago and the mobile phone camera, the banking payments towards retailers, institutions and online websites could be made faster, safer and cheaper?

The Quick Response Codes or QR Codes is the trademark of Denso Wave Incorporated for a type of two-dimensional code first designed by Toyota to trace vehicles position on the production lane with the help of a video high speed camera that was able do recompose a digital image in order to extract information from the squares and dots composing the QR code – figure 1.

Figure 1: Quick Response Code



Source: Wikipedia

This is the beginning of contactless payments, due to the fact that the transaction is made without any physical touch between the sellers and the buyers' devices. With the help of integrating applications, the payment is made by a simple “barcode scan” with the buyers' mobile phone camera capable to read the QR Code displayed by the seller's cashier using a preinstalled application. Actually the buyer identifies the seller and accepts the information sent to him, in opposition to the cards payments were the seller identifies the buyer by reading his card.

The parties involved in the contactless payments are besides the buyer and the seller at least one bank, a mobile communication provider and a transaction integrator. The main advantage of the contactless payments is the higher transactions speed and lower fees and commissions (depending by the integrator and the country). This means that merchants will adopt in large scale this type of payment as they will register an increased speed in performing the transactions and in the same amount of time more clients will be served. In addition, the transactions integrators are cutting down the fees and commissions willing to overcome card issuers' competition. The contactless payment ecosystem is presented in the figure below:

Figure 2: Contactless Payment Ecosystem

1. The cashier sends the sum payable to the transaction switch.
2. The customer scans the unique QR code on the cashier and sends the merchant ID to the transaction switch.
3. The customer receives a payment request on his mobile phone, and is asked to approve the amount.
4. The customer confirms the amount to be paid by entering his personal four digit pin code.
5. Similiar to a regular card payment, the banks verify the information and processes the transaction.
6. The transaction switch confirms the transaction to the cashier and the customer.

Source: www.seamless.se

The bill issuers started to use QR Codes printed on their invoices and register a quicker payment ratio, meaning that they recover their debts more rapidly, having the opportunity to use liquidity to increase their incomes.

Online businesses benefit from this type of payment; especially in northern countries like Sweden were the QR Code based transactions having their own section in the website paying options. In the figure 3 we imagine the existence of a company named “Quick Transfer” that enables participants to a Romanian economic conference to pay their participation fee by simply scanning the QR Code. If the readers of this article have the curiosity to experience a contactless interaction between the web page and their own mobile phone, please scan with a QR Code reading application from Android Market or Apple Store.

After the scan, a message in Romanian will appear, simulating the message generated by a real transaction application.

Figure 3: Example of how a QR code might be used to pay a conference fee

The screenshot shows the website for the 19th International Economic Conference - IECS 2012, dated 15 JUNE 2012. The page is titled "PAYMENT" and features a search bar on the left. The main content area displays the following information:

350 lei/paper, for national payments
80 euro/paper, for international payments
 covering registration, conference package (program and Conference Proceedings), access to all conference sessions and daily meals (lunch & dinner). Transport and accommodation expenses will be borne by participants. In case the paper is multi-authored and more than one author would like to participate in the conference, each participant pays the registration fee separately.

The conference package will be available **only for the authors who attend.**

Payments are to be made by bank transfer, as follows:

- **in lei**, into the account of "Universitatea Lucian Blaga", Sibiu, Victoriei No. 10, CUI: 4480173, IBAN: RO63TREZ576504601X000406, Trezoreria Sibiu
- **in euro**, into the account of "Universitatea Lucian Blaga", Sibiu, Victoriei No. 10, IBAN: RO44RNCB0227036041020003, BCR Sibiu, SWIFT CODE: RNCBROBU

All bank transfers will bear the specification: "Registration fee for the International Economic Conference - IECS 2012".

Payments are to be made by "QUICK TRANSFER", by scanning the below QR code:



The left sidebar contains a navigation menu with the following items: Home, Deadlines, Topics, Committee, Conference Program, Registration, Submission, Papers Format, Payment / Fees, Students, Venue, Accomodation, IECS Archive, Contact Info, Economic Sciences, Lucian Blaga University, and AFER.

Contactless payments using the QR Codes scan is not risk free and as many other new technologies implemented, some faults might appear, nevertheless the benefits are higher than the risks and this solution might appear as the cards payment alternative. In 2011 Swedish money transactions trough QR Codes registered 2,4 billion transactions.

4. Conclusions

Time is money and saving both time and money on your current activity means efficiency. The human minds will continue their quest to discover how to improve results of the daily activities and the banking system will be a reliable promoter of such solutions. The new technologies will be able to make the contactless payment systems even more secure as they are now pushing them in the spotlight of every day life.

Providing a more efficient and safer alternative to classic transactions, contactless payments trough QR Codes scanning mean a step forward for all the parties involved, meaning that this solution will spread very quickly.

Contactless payments trough QR Codes use existing infrastructure and do not require massive investments to integrate this type of solution.

The contactless payment system will be in the near future the most used method to pay. As proof we might also consider the fact that RFID (Radio Frequency Identification) technology is recently used by the card issuers included in their plastic cards. The main disadvantages for this type of contactless payment solution are that new devices must be installed besides the ones already used and the costs for an additional infrastructure are high. Also, due to security reasons, the payment available through this technology is limited to small amounts per day.

No matter what type of solution will be used in the following years, contactless payments are the new retail transactions trend and will continue to evolve since they will be a common used method for all of us.

5. References

- Bill Glover, Himanshu Bhatt (2006) *RFID essentials*, O'Reilly Media, Inc., ISBN 0-596-00944-5, p. 88-89
- Borko Furht (2011) *Handbook of Augmented Reality*. Springer. p. 341. <http://books.google.com/books?id=fG8JUdrScsYC&lpg=PP1&dq=Handbook%20of%20Augmented%20Reality&pg=PA341>.
- Davis, Kevin (21 November 2007) *Increasing Financial Household Risk - An Increasing Social Risk?*, p. 1
- Gambon, Jill (16 April 2007) *Recall Corp. Uses RFID to Recall Cartons*, RFID Journal, <http://www.rfidjournal.com/article/purchase/3187>.
- <http://www.internetretailing.net/2011/08/14m-americans-scanned-qr-and-bar-codes-with-their-mobiles-in-june-2011/> 16 August 2011
- Orli Sharaby (2010) *Form Meets Function: Extreme Makeover QR Code Edition*, <http://blog.360i.com/emerging-media/creative-qr-codes>.
- Weis, Stephen A. (2007), *RFID (Radio Frequency Identification): Principles and Applications*
- www.hbs.org
- www.seamless.se
- www.zf.ro

FINANCIAL PERFORMANCE OF BANKS ANALYSIS

BĂTRÂNCEA Ioan

Ph. D. Professor, Faculty of Economics and Business Administration, Babeş-Bolyai University, Cluj-Napoca, Romania, i_batrancea@yahoo.com

BĂTRÂNCEA Maria

Ph. D. Professor, Bogdan Vodă University, Cluj-Napoca, Romania, batrancea_maria@yahoo.com

MOSCVICIOV Andrei

Ph. D. Assistant professor, Faculty of Business, Babeş-Bolyai University, Cluj-Napoca, Romania, andreim@anvico.ro

Abstract: *In the paper the authors present an empiric research on banking industry in the different regions Romania. Thus the authors show the connections between ROE on the one hand and liquidity indexes, financial leverage on the other hand. Also the authors determine the relation between ROA and the variables mentioned before.*

Key words: panel methods, return on equity, return on assets, financial leverage

JEL classification: G 21

1. Introduction

Today, medium banks are becoming more and more a complex ownership structure that mimics the organizational models of commercial banks and, therefore, performance optimization strategies should occupy an important place in the management, given the increasingly competitive environment. Cooperative performance is an indication of stability and confidence of depositors, so that obtaining higher performance should be encouraged for an efficient and dynamic financial system. In this context, medium banks cannot afford to offer products and services free of profitability, so that they have to organize their functions in a manner to enable them to establish the exact contribution to the results of their component parts.

This study aims to identify factors that explain economic and financial performance of medium banks. This will be achieved through panel data models as the regression equations will be estimated based on data sets that are in the same time series and cross-sectional data.

2. Methodology

Data Panel Models

These models allow:

- Summarizing through a single coefficient the impact of a variable on a group of time dependent variables series (group of companies, countries, etc.);
- estimating the specific coefficients (constant or coefficients of independent variables) for each time series considered as a dependent variable - fixed effects;
- Grouping dependent variables in categories and estimating the impact of the category (of which the dependent variable is part of) on its evolution.

Brooks (2008) mentions several advantages of these models:

- solves more problems compared to time series analysis or cross-sectional series;
- allow the assessment of the variables behavior and their relationship over time;
- minimize omitted variables problems that arise in the case of time series or cross-sectional (more informative data, more variability, more degrees of freedom, less co-linearity between variables, more effectiveness);
- “control” individual heterogeneity;
- Are able to capture adjustments dynamic.

From an econometric point of view, a panel can be written in the following form:

$$y_{it} = a + bx_{it} + \varepsilon_{it}$$

where: y_{it} Is the dependent variable; a is a constant; b is the size vector $k \times 1$ of the coefficients to be estimated; x_{it} is the size vector $1 \times k$ of the observations of the explanatory variables;
 $t = 1, \dots, T$; $i = 1, \dots, N$.

In this equation, the term ε_{it} is very important because, depending on his behavior, panel data models are divided into:

- *Models with fixed effects*, when ε_{it} it is assumed that vary non-stochastic for $t = 1, \dots, T$ and/or for $i = 1, \dots, N$. These models are analogous to the one-dimensional models with dummy variable and are used when there are unique and time constants attributes of the analyzed variables that are not the result of a random variation;
- *Models with random effects*, when ε_{it} it is assumed that vary stochastic for $t = 1, \dots, T$ and/or for $i = 1, \dots, N$. These are used when there are unique attributes, time constants of the analyzed variables that are the result of a random variation and are not correlated with variables regresses. The model is suitable if one wants to extract some conclusions about the entire population and not just for the examined sample.

Empirical models of economic and financial performance of medium banks

Considering the model of speciality literature in the field, I assumed that there are three factors that influence the economic and financial performance evolution:

- Liquidity Index (IL) defined as the ratio between effective liquidity and necessary liquidity;
- The size (M) of the cooperative approximated by the volume of total assets (AT); in the model were used logarithmic values of total assets;
- Financial leverage (LF), a representative indicator for the size of indebtedness, defined as the ratio between total assets and total equity, is considered a risk proxy.

Financial performance is approximated by the rate of financial return on equity (ROE), defined as the ratio between net profit and equity, and the economic rate is approximated by the rate of economic return (ROA) defined as the ratio between net profit and total assets. Given these clarifications, we have two models - one for financial performance and one for economic performance - which can be written as:

- Financial Performance Model:

$$ROE_{it} = a + b_1 M_{it} + b_2 IL_{it} + b_3 LF_{it} + \varepsilon_{it}$$

- Economic Performance Model:

$$ROA_{it} = c + d_1 M_{it} + d_2 IL_{it} + d_3 LF_{it} + \omega_{it}$$

where $t = 1, \dots, 5$ years and $i = 1, \dots, 4$ regions. Thus, is the financial return on equity rate in the region i in year t , is the rate of economic return in the region i in year t , IL_{it} is the liquidity index in the region i in year t , and so on.

The next step is to specify the type of effect - fixed or random. Often, random effects model is considered more adequate when the entities in the sample are chosen at random from a population, while the fixed effects model is more plausible when the entities in the sample form the entire entity. From a technical standpoint, the transformation from GLS procedure in the random effects model will not eliminate the explanatory variables that are constant over time and thus they influence the dependent variable. Generalized Least Squares procedure allows one to specify the structure of the variation matrix depending on how the residues are linked. In addition, since there are fewer parameters to be estimated (not having dummy variables), the model should generate more robust estimators than the model with fixed effects. However, random effects model has a major drawback: it is valid only when ε_{it} , respectively ω_{it} are uncorrelated with the explanatory variables regresses (x_{it}). This hypothesis is stricter than the fixed effects model where it is imperative that ε_{it} , respectively ω_{it} are independent of x_{it} .

To see what kind of effects are appropriate to our models, the test developed by **Hausman** (Hausman, 1978, pp. 1251-1271) was applied, which has a null hypothesis (H_0) of uncorrelated random effects with explanatory variables.

Table 1: Hausman Test Results

	Statistics χ^2	Number of Degrees of Freedom	The Probability of Acceptance of H_0
Cross-section random	19.5254	3	0.0002

From the table we see that the probability of accepting the null hypothesis is very small, so the random effects model is not recommended in this case.

Thus, our models are fixed effects models and can be rewritten as:

- financial performance model:

$$ROE_{it} = a + b_1M_{it} + b_2IL_{it} + b_3LF_{it} + \mu_{it} + \gamma_{it}$$

- economic performance model:

$$ROA_{it} = c + d_1M_{it} + d_2IL_{it} + d_3LF_{it} + \eta_{it} + \upsilon_{it}$$

where $\mu_{it} + \gamma_{it} = \varepsilon_{it}$, respectively $\eta_{it} + \upsilon_{it} = \omega_{it}$, μ_{it} , respectively η_{it} are the specific effects that include all the variables that influence ROE_{it} , respectively ROA_{it} cross-sectional, but do not vary over time (for example, the country where the medium banks are operating is the same, so it doesn't vary over time, but affects all entities; in the same way the activity sector can be seen) and γ_{it} , respectively υ_{it} stochastic components that vary both in time and cross-sectional (between regions) and capture all that remained unexplained on ROE_{it} , respectively ROA_{it} .

Finally, models were estimated taking into account the heteroscedasticity (unequal variance over time) cross-sectional - allowing the residual variance to differ cross-sectional and assuming that residues from different periods and different cross-sections are zero - and calculating the co-variation coefficients according to White estimator that is strong in the presence of cross-sectional correlations and different errors of variances in each cross-section. In the case of panel options for weights the "cross-section" procedure has been selected. In the case of panel options for the calculation of co-variation coefficients the "White cross-section" method has been selected.

3. Sample Data and Empirical Results

Sample Data

The sample database includes financial statements from the 2005-2010 periods of medium banks in Romania. The financial statements are aggregated into four regions: North-West (NW), Centre (C), South-West (SW) and North-East (NE). Based on these aggregated statements were calculated annual values of the indicators / variables used in the model (return on financial return of equity, economic rate of return, total assets, liquidity index and financial leverage) for each of the four regions.

Descriptive characteristics are summarized in the below table (average and maximum value) of the five indicators.

Table 2: Descriptive statistics over the entire period

Region	Indicator									
	ROE (%)		ROA (%)		AT (mil.lei)		IL		LF	
	Average	Max.	Average	Max.	Average	Max.	Average	Max.	Average	Max.
NW	14.87	30.88	0.96	1.97	45.17	61.89	7.81	11.58	23.13	33.93
C	18.40	35.31	1.67	3.13	24.72	35.64	9.44	16.85	17.27	25.57
SW	28.07	42.68	1.52	2.53	37.33	61.78	10.62	21.23	24.06	44.46
NE	31.14	38.42	2.88	3.85	44.37	66.89	3.29	5.63	11.84	17.85
Total	23.12	42.68	1.76	3.85	37.89	66.89	7.79	21.23	19.08	44.46

Source: Personal calculations based on aggregated financial statements.

It can be seen from the table that, on average, the largest economic and financial performance, but also the greatest risks of liquidity and debt in the period 2005-2010 were registered by medium banks in the North-East region, while medium banks from South-West are the best in terms of liquidity and indebtedness. Medium banks in the North-West although the largest record the lowest performance and those from the centre, which are the smallest ranking third position if we refer to financial performance and financial leverage and ranking second position in terms of liquidity and economic performance.

Empirical Results

The technique used in shaping the links of the data panels is that of the smallest squares. It is worth mentioning that panels are “balanced” (*balanced panel*) that is, each region is represented in each time period (year).

A challenge in modeling panel data with large time dimensions is represented by the fact that variables may be non-stationary. However, in this case, the time period is only five years and the probability to be non-stationary variables is small. But for safety, we have applied the unit root test **Fisher-Philips-Perron (Fisher-PP, 1933)**(Fisher, 1933)(Philips & P.Perron, Testing for Unit Roots in Time Series Regression, 1988, pp. 335-346) proposed by **Maddala** and **Wu** (Maddala & Sh.Wu, 1999) and **Choi** (Choi, 2001) which has the null hypothesis of non-stationary whose probability of acceptance / rejection is determined as a combination of probability of acceptance / rejection of unit root test **Philips-Perron (PP)** (Philips & P.Perron, Testing for Unit Roots in Time Series Regression, 1988, pp. 335-346) applied to individual series.

Table 3: Fisher-PP Test Results

	ROE		ROA		M		IL		LF	
	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.
F-PP	36.20	0.000***	16.65	0.03**	15.39	0.061*	23.39	0.91*	14.30	0.07*

Notes: * Significant with a risk threshold of 10%. **Significant with a risk threshold of 5%. ***Significant with a risk threshold of 1%. Stat. is the statistic of the test and Prob. Is the probability of accepting the null hypothesis.

It is noted that the series are stationary; the null hypothesis of unit root is rejected in all cases – for ROE with a risk threshold of 1% for ROA with a risk threshold of 5% and for the rest with a risk threshold of 10%.

Once the series stationary is verified, the next step is to start to shape the link between economic and financial performance of medium banks and their size, liquidity index and financial leverage through panel regressions with fixed effects.

The Results of Estimation of Financial Performance Model

Table 4: The results of the model with fixed effects of financial performance

Coefficient	Point Estimate	t-statistic	Probability	Wald Test
<i>a</i>	451.431 (43.63)	10.346	0.000***	-
<i>b</i> ₁	-26.744 (2.50)	-10.703	0.000***	-
<i>b</i> ₂	0.982 (0.18)	5.473	0.000***	29.96***
<i>b</i> ₃	1.435 (0.06)	25.199	0.000***	-
<i>R</i> ² = 0.8394				

Notes: *** Significant with a risk threshold of 1%. In parentheses are the standard deviations / errors (SD). Critical values for Wald test are 3.8 at a risk threshold of 5% and 6.6 at a risk threshold of 1%.

The probability column contains the probabilities of acceptance of the null hypothesis $H_0 : a = 0$, respectively $b_i = 0$, where $i = \overline{1,3}$. It is noted that in all cases the probabilities are zero and therefore the estimated coefficients are significant with a risk threshold of 1%. Because point estimate of the coefficient b_2 is close to zero, it has been verified by Wald test (Wald, 1939, pp. 299-326) if it differs significantly from zero. Wald test statistic follows a chi-square distribution with a degree of freedom and is calculated in this case as follows: $W = \frac{(b_2)^2}{(SD)^2}$, where SD is standard deviation. The null hypothesis of the test is $H_0 : b_2 = 0$. From the table it can be noted that the Wald statistic is much higher than the critical value corresponding to the risk threshold of 1%, the coefficient b_2 is significantly different from zero.

Given the point estimates of the coefficients, fixed effects model of financial performance can be written as:

$$ROE_{it} = 451.431 - 26.744M_{it} + 0.982IL_{it} + 1.435LF_{it} + \mu_{it} + \gamma_{it}$$

Model results can be interpreted as follows:

- between financial performance and the size of medium banks is an inverse relationship: at a decrease of 1% of total assets, we expect that, on average, across all four regions, financial performance to increase by 26.74% and vice versa; this relationship is similar to the sized effect on stock markets (small market capitalization companies have abnormally high returns compared to large capitalization);

- between financial performance and liquidity of medium banks there is a direct relationship: at a 1% increase of the liquidity index, we expect that, on average, across all four regions, financial performance to increase by 0.982% and vice versa. This direct relationship suggests that when the maturities of assets are correlated with the liabilities maturities and the needs of liquidity are assessed and properly covered, the financial performance of medium banks will be “affected” / long-term positively influenced;

- between financial performance and financial leverage of medium banks there is a direct relationship: at a 1% increase of financial leverage as we expect that, on average, across all four regions, financial performance to increase by 1.435% and vice versa. So, more the total assets are financed in a greater extent from own sources, more efficiently is the equity of the partners used, credit cooperative being more powerful.

However, the financial performance of medium banks can also be influenced by other factors as indicated by statistics which show that changes in financial performance is explained only in a proportion of 83.94% by variation in size, liquidity and financial leverage.

The Results of Estimation of Economic Performance Model

Table 5: The results of the model with fixed effects of economic performance

Coefficient	Point Estimate	t-statistic	Probability	Wald Test
c	18.538 (6.52)	2.842	0.014**	-
d_1	-0.957 (0.39)	-2.402	0.032**	5.77**
d_2	0.037 (0.01)	3.774	0.002***	14.24***
d_3	-0.025 (0.02)	-1.526	0.15	-
$R^2 = 0.8792$				

Note: ***Significant with a risk threshold of 1%. **Significant with a risk threshold of 5%. In parentheses are the standard deviations / errors (SD). Critical values for Wald test are 3.8 at a risk threshold of 5% and 6.6 at a risk threshold of 1%.

The probability column contains the probabilities of acceptance of the null hypothesis $H_0 : c = 0$, respectively $d_i = 0$, where $i = \overline{1,3}$. It is noted that for the first three coefficients the probabilities are small, so they are significant – c and d_1 are significant with a risk threshold of 5% and d_2 is significant with a risk threshold of 1%. In the case of the fourth factor d_3 , the probability is high, so the null hypothesis is accepted and d_3 is insignificant. Because also in the case of this model there are coefficients (d_1 and d_2) whose point estimates are close to zero, Wald test was applied again to see if they differ significantly from zero. From the table we can see that, in the case of the coefficient d_2 , Wald statistic is greater than the critical value corresponding to the risk threshold of 1%, which is indeed significantly different from zero, and if the case of coefficient d_1 situation is similar, except that the null hypothesis ($H_0 : d_1 = d_2 = 0$) is rejected with a risk threshold of 5%.

Given the point estimates of the coefficients, fixed effects model of economic performance can be written as:

$$ROA_{it} = 18.538 - 0.957M_{it} + 0.037L_{it} + \eta_{it} + \nu_{it}$$

4. Conclusions

The results of the model can be interpreted as follows:

- Between economic performance and the size of medium banks there is, this time also, an inverse relationship: for a decrease of 1% of total assets, we expect, on average, across all four regions, for economic performance to increase by 0.957% and vice versa;

- Between economic performance and liquidity of medium banks there is also a direct relationship: for a 1% increase of liquidity index, we expect, on average, across all four regions, for economic performance to increase by 0.037% and vice versa.
- Between economic performance and financial leverage of medium banks there is no relationship.

In this case also the economic performance of medium banks can also be influenced by other factors as indicated by statistics which show that changes in economic performance is explained only in a proportion of 87.92% by the variation in size and liquidity.

In conclusion, between the size of medium banks and their economic and financial performance there is an inverse relationship, between liquidity index and the economic and financial performance there is a direct relationship and the financial leverage directly affects only financial performance.

5. References

- Allen, L. & Bali, T.G. (2007), *Cyclicalities in Catastrophic and Operational Risk Measurements*, Journal of Banking and Finance, Vol.31, No.4
- Berkowitz, J., Brien, J. (2001), *How Accurate are Value-at-Risk Models at Commercial Banks*, Graduate School of Management Division of Research and Statistics University of California, Irvine Federal Reserve Board
- Brooks, Ch., (2008), *Introductory Econometrics for Finance*, Cambridge University Press
- Choi I. (2001), Unit Root Tests for Panel Data, *Journal Money and Banking* 20
- Clay M., Farley P., Hunt R., and LaFleche T. (2010), EMEA Banking 2010 Top 10 Predictions: The Year of Intelligence (Electronic Edition), http://www.amazon.com/EMEA-Banking-2010-Top-Predictions/dp/B0036OGFJW/ref=sr_1_196?ie=UTF8&s=books&qid=1265271202&sr=1-196
- Collier, C., Forbush, S., Nuxoll, D.A. (2003), Evaluating the Vulnerability of Banks and Thrifts to a Real Estate Crisis, *F.D.I.C. Banking Review*
- Down, K. (2006), *Measuring Market Risk*, John Wiley & Sons. Chichester, Eurobank Research, November.
- Firer, C. (1999), Driving Financial Performance through the du Pont Identity: A Strategic Use of the Financial Analysis and Planning, *Financial Practice and Education Review*, Spring/Summer
- Fisher R.A (1933), *Statistical Methods for Research Workers*, 4th Edition, Edinburgh: Oliver&Boyd
- Hausman J.A. (1978), Specification Tests in Econometrics, *Econometrica*, Vol. 46
- Hoggarth, G., Logan, A., Zicchino, I. (2004), Macro Stress Tests of U.K. Banks, *Manuscript, Bank of England*
- Maddala, Sh.Wu G.S (1999), A Comparative Study of Unit Root Tests with Panel Data and a New Simple Statistics, *Oxford Bulletin of Economics and Statistics*, Special Issue 0305-9049
- Philips P.C.B, P.Perron (1988), Testing for Unit Roots in Time Series Regression, *Biometrika*, 75
- Rajan, R., Zingales, L. (2003), Banks and Markets: The Changing Character of European Finance, *NBER Working Paper* 9595
- Wald, A. (1939), Contributions to the Theory of Statistical Estimation and Testing Hypotheses, *Annals of Mathematical Statistics* 10(4): 299 – 326
- Yee, C.Y., Cheah, Ch.Y.J. (2006), Fundamental Analysis of Profitability of Large Engineering and Construction Firms, *Journal of Management in Engineering*, ASCE/October, p.203, DOI:10.1061/(ASCE) 0742-597X(2006)22:4(203)

THE CONNECTION BETWEEN THE LUMP-SUM TAX AND THE SMES' TURNOVER IN ROMANIA

BECA Marușă

*Ph.D. Student, Faculty of Accounting, Academy of Economic Studies,
Bucharest, Romania, marushabk@yahoo.com*

ȘERBAN Elena Claudia

*Ph. D. Professor, Faculty of Accounting, Academy of Economic Studies,
Bucharest, Romania, claudia.serban@cig.ase.ro*

Abstract: *This article's goal is to present the correlation between the firms' turnover and the lump-sum tax on the small and medium enterprises' activity, introduced in Romania in May 2009 at the IMF's recommendation to increase budget revenue and cleanse the business sector of inactive firms. We have studied the data supplied by the Emergency Ordinance no. 34 from April 11th 2009, published in the Official Gazette no. 249 from April 14th 2009 and the literature in the field, in order to see what type of connection there is between the two variables, the turnover and the lump-sum tax, and measure the intensity of the relationship.*

Key words: lump-sum tax, small and medium enterprises, turnover, tax evasion, Romania

JEL classification: C 12, C 20, H 25, H 26, M 48

1. Introduction

A lump-sum tax on companies that allegedly evade taxes by constantly reporting only losses has been introduced by Romanian authorities. The amount of the lump-sum tax, which had depended on companies' turnover, was between 500 and 10,000 Euros.

The lump-sum tax can be defined as a compulsory payment, established as fixed sum by the public administration organs respecting the legal foresights, for the individual and/or juridical individuals and paid from their incomes.

The tax rate represents the compulsory, general and definitive money draw realized by the state from the incomes or fortune of natural and/or legal persons in the terms and quantum stipulated by law, towards covering the public outgoings and intervention of the state in the society and economy, without any obligation of this one to carry out any equivalent and immediate duty.

Its main purpose was to reduce the tax dodging and so increase the state budget income, but its effects had been very controversial. There were voices that stated the lump-sum tax eliminated the inactive firms from the Trade Register and the underground economy and others that said it lead to an increasing number of dissolutions and suspensions, a growing unemployment rate and a drop in the declared incomes.

The role of the lump-sum tax in the Romanian economy can be summarized as it follows: it tends to eliminate the underground economy, through the reduction of the tax dodging; it leads to the clotting of the business environment; it tends to eliminate the inactive firms from the Trade Register and also helps the state budget income consisted of taxes to increase.

2. Literature review

After Romania's EU accession, one of the main changes was connected to the taxation of the micro-enterprises' revenues, the latter having the possibility to opt for the payment of a taxation quota of 2% of the turnover in 2007, of 2.5% in 2008 and of 3% in 2009. Beginning with 2010, the possibility to pay the income tax could be eliminated. The micro-enterprise is the legal person who on December 31st of the previous fiscal year cumulatively meets certain conditions: it produces revenues, other than those resulting from consultancy and management, in proportion of over 50% of the total revenues; it has registered among his objects of activity the production of goods, the rendering of services and trade; it has between 1 and 9 employees and it has revenues that have not exceeded the equivalent in lei of 100,000 euro.

At the same time with the Emergency Decree no. 34 and of the Decision no. 488, the annual minimum tax, called the lump-sum tax, came into force beginning with May 1st 2009, and it seemed predestined to the fiscal waves that had generated it.

The calculation of the minimum tax to be paid for the corresponding trimester or year is made by being situated in a category of incomes, depending on the turnover, registered on December 31st of the previous year. The turnover consists of the total value of the goods supplies and services gathered in a calendar year, excluding the tax. (Crăciuneanu, Săvoiu, 2010)

The Ordinance sets an annual minimum tax to be paid in cases where the profits tax established by the legal persons is smaller than the amount of the minimum tax. The minimum tax is calculated depending on the total revenues registered on 31st of December of the previous year, thus:

Table 1: The level of the lump-sum tax

Annual total revenues (RON)	Annual minimum tax (RON)
0 – 52,000	2,200
52,001 – 215,000	4,300
215,001 – 430,000	6,500
430,001 – 4,300,000	8,600
4,300,001 – 21,500,000	11,000
21,500,001 – 129,000,000	22,000
Over 129,000,001	43,000

Source: Emergency Ordinance no. 34 as of 11.04.2009 (Official Gazette no. 249/14.04.2009)

The new minimum tax scale applies also in case of the micro-enterprises which opt for paying the tax on the revenues of the micro-enterprises (in case the tax owed by these micro-enterprises is smaller than the minimum tax). (Mazilu, 2009)

The idea of introducing the lump-sum tax was resumed by the actual govern, when Mr. Gheorghe Pogea announced that a lump-sum tax will be introduced for six types of businesses, the scope being the growing of the incomes of the state budget, the motivation being that the majority of the companies don't pay the profit tax. To sustain his affirmations, the Minister was showing that from approximately 680.000 of companies that have laid down the financial statements corresponding to 2007, about 12.000 assure approximately 85% from public incomes, which means that the immense majority of companies don't contribute at all. From the information supplied by mass-media, in conformity with the analysis made by the Finances Minister for 2007, approximately 242.000 companies (almost 39%) from the registered societies have had losses. If we report the number of companies with losses to the ones that have laid down the annual financial statements, the percentage is of approximately 35.6%, but neither this percentage reflects the degree of profit of the Romanian companies, affirmation that I will sustain in what will follow. The 35.6% percentage resulted from an empirical calculus is very close to the 35 – 37% percentage sustained by Mr. Florin Pogănar, the president of the Romanian Businessmen Association, in conformity with the Newsletter publication. (Antonescu M, Antonescu L, 2010)

Table 2: The tax rate, the taxable profit and the rate of return for the maximum incomes, according to the lump-sum tax grid

Total annual incomes (Lei)	Minimum annual tax (Lei)	Tax rate	Taxable profit	Rate of return for the incomes
1	2	3=2/maximum income from taxing grid	4=2/16%	5=4/maximum income from taxing grid
0 - 52.000	2.200	4,23%	13.750	26,44%
52.001 - 215.000	4.300	2%	26.875	12,50%
215.001 – 430.000	6.500	1,51%	40.625	9,45%
430.001 – 4.300.000	8.600	0,20%	53.750	1,25%
4.300.001 - 21.500.000	11.000	0,05%	68.750	0,32%
21.500.001 – 129.000.000	22.000	0,017%	137.500	0,11%
Over 129.000.001	43.000			

Source: Antonescu Mihail, Antonescu Ligia, 2010: 47

If we analyze the minimum established tax rate, reported to the maximum business sum, in accordance with the taxing grid, we notice that there are huge discrepancies in this tax rate, for which

there can not be brought any sustainable economical or financial arguments. So, it is easily noticed that the small companies, the term that it is used to describe them in the fiscal legislation, have been divided in 3 taxing grids. Basing on the above presented argumentation, it results that companies that accomplish a positive but less than 52.000 lei income, and also the most majority of the ones that accomplish an income between 52.000 – 215.000 lei can not survive without making tax dodging. If we compare the current 3% turnover tax of small and medium sized enterprises (100.000 euro = 430.000 lei X 3% = 12.900 lei), to the lump-sum tax we notice that the lump-tax is about 50% (6500 lei), which can only represent a measure of fiscal relaxation, that is valid not only in the case of small enterprises.

For the first 3 categories from the taxing grid, the regression of the tax is acceptable. Starting with the 4th category, there are major differences between the incomes and the minimum due tax and this is, in terms of economic and financial analysis, unacceptable. Analyzing the data from the table presented above it is clear that firms that had over 100.000 euro incomes in the previous year are more advantaged in terms of “lump-sum” tax than the small or medium sized enterprises, so the fiscal relaxation is much more consistent. Of course, we exclude those firms that reported losses in the previous year.

If we analyze the companies with over 260 millions lei incomes that have under 0.10% profit rate we notice that fiscal relaxation is directly proportional with incomes. If we look to the data in the table we can see that is no correlation between income category and due tax. The incomes in the 4th category are 10 times bigger than the 3rd category ones, but the tax is only by 1.32. The incomes in the 5th category are 5 times bigger than the 4th category ones, but the tax is only by 1.28. The incomes in the 6th category are 6 times bigger compared to the 5th category ones and the tax is only twice as high. (Antonescu M, Antonescu L, 2010)

From our point of view, by implementing the lump-sum tax abnormal situations can occur for some tax payers, wherein the lump-sum tax can exceed the value of total income. It will have negative effects over economy and the level of budget collections: increase of underground economy, the firms will prefer making collections without invoice in order to reduce their turnover, and as a result, the budget income will drop; many firms will collapse, that will result in multistage effects (rise of number of unemployed people, rise of budget expenses with unemployment aids, reduction of budget collections from taxes and wage taxes: social security contributions, the unemployed, health, wage tax etc.); reduction of VAT collections; reduction of budget collections from profit tax, co-workers' income tax; a smaller part of firms will change into Individual or Family Business in order to get rid of lump-sum tax payment. (Petre, Bontaș, 2010)

3. Research method and scope

The data, that is the table of the level of lump-sum tax, was collected from the Emergency Ordinance no. 34 from April 11th 2009, published in the Official Gazette no. 249 from April 14th 2009.

The methods employed were the Single Variable Regression method and Analysis of Variance (ANOVA), through Excel software.

The research stages were the following:

- Gathering the appropriate data;
- Making the following notations: the independent variable x – the turnover and the dependent variable y – the lump-sum tax
- Calculating the centered turnover for each interval
- Realizing a XY Scatter in Excel in order to see the type of correlation between the two variables
- Establishing the mathematical equation
- Estimating the parameters of linear regression model;
- Testing the validity of the regression model for a significance level of = 5%;
- Testing the significance of model parameters for a significance level of = 5%;
- Determine the residual error;
- Measuring the intensity of the relationship between two variables using the correlation coefficient

The scope of the research is to find out what kind of correlation there is between the level of the lump-sum tax established by the Romanian authorities and the amount of turnover the firms' have and to measure the intensity of the connection.

4. Presentation of data and the result of the single variable regression

We are looking to create a mathematical model which describes the connection between causal factor (exogenous) x and effect factor (endogenous) noted with y .

We are going from the study of economic phenomenon which is the object for analyze and the identification of the cause-effect relationship between the economical variables.

$$y = f(x)$$

As an informational source, the existence, direction and connection form between variables can be the scatter plot. Assuming that from the scatter plot's analysis we have two variables and linear dependence as it follows:

$$y = \alpha + \beta x$$

This connection is variable only if y has no other variables but x . It's difficult to suppose such a thing.

On statistical level i , the dependence between variables is:

$$y_i = \alpha + \beta x_i + \varepsilon_i = \hat{y}_i + \varepsilon_i, \quad \varepsilon_i \text{ is the random error (residual component) for that statistical unit.}$$

$y_i = \text{predictable component (determinist)} + \text{random error}$

$$y_i = \hat{y}_i + \varepsilon_i$$

The linear regression model in this sample is:

$$y_i = a + b x_i + \varepsilon_i$$

With a and b estimators for α and β we have:

$$\hat{y}_i = a + b x_i$$

Hypothesis 1 : functionally form

$$y_i = \alpha + \beta x_i + \varepsilon_i = \hat{y}_i + \varepsilon_i$$

Hypothesis 2 : errors average is 0

$$\bar{\varepsilon} = 0$$

Hypothesis 3 : Homoscedasticity: Dispersions are constant for all x_i values

$$\sigma_\varepsilon^2 = \text{cst } \forall i = \overline{1, n}$$

Hypothesis 4 : Non-uncorrelation error (deviation of observations from expected values are uncorrelated)

$$\text{Cov}(\varepsilon_i, \varepsilon_j) = 0 \quad \forall i \neq j$$

Hypothesis 5 : Uncorrelation between regressor and errors

$$\text{Cov}(x_i, \varepsilon_j) = 0 \quad \forall i \text{ si } j$$

Hypothesis 6 : The random variable has a normal distribution

$$\varepsilon_i \sim N(0, \sigma^2)$$

The linear regression model in a sample is:

$$y_i = a + b x_i + \varepsilon_i$$

and with *predictable component*:

$$\hat{y}_i = a + b x_i$$

Chosen criterion to determine the parameters a and b , is minimizing the sum of squares of deviations.

$$S(a, b) = \min \sum_{i=1}^n e_i^2 = \min \sum_{i=1}^n (y_i - \hat{y}_i)^2 = \min \sum_{i=1}^n (y_i - a - b x_i)^2$$

The normal equation system will be:

$$\begin{cases} \frac{\partial S}{\partial a} = 0 \\ \frac{\partial S}{\partial b} = 0 \end{cases} \Rightarrow \begin{cases} na + b \sum_{i=1}^n x_i = \sum_{i=1}^n y_i \\ a \sum_{i=1}^n x_i + b \sum_{i=1}^n x_i^2 = \sum_{i=1}^n x_i y_i \end{cases}$$

Table 3: The level of the lump-sum tax according to the firms' turnover

Total annual incomes	Centered Xi	Minimum annual tax
0 - 52.000	26.000	2.200
52.001 - 215.000	133.500	4.300
215.001 - 430.000	225.750	6.500
430.001 - 4.300.000	2.365.000	8.600
4.300.001 - 21.500.000	12.900.000	11.000
21.500.001 - 129.000.000	75.250.000	22.000

Source: the Emergency Ordinance no. 34 from April 11th 2009, published in the Official Gazette no. 249 from April 14th 2009

We have to:

- Estimate parameters of linear regression model;
- Test the validity of the regression model for a significance level of= 5%;
- Test the significance of model parameters for a significance level of= 5%;
- Determine the residual error;
- Measure the intensity of the relationship between two variables using the correlation coefficient and report, test the significance of the indicators used for a confidence level of 0.5%;

In order to calculate the parameters *a* and *b* we had to reduce the data, by dividing the variables to 1.000.

Table 4: The calculation of parameters *a* and *b*

No observations	Centered xi	Minimum annual tax (yi)	xi ²	xi*yi
1	26	2,20	676	57,20
2	134	4,30	17.822	574,05
3	226	6,50	50.963	1.467,38
4	2.365	8,60	5.593.225	20.339,00
5	12.900	11,00	166.410.000	141.900,00
6	75.250	22,00	5.662.562.500	1.655.500,00
Total	90.900	54,60	5.834.635.186	1.819.837,63

The parameters will be: $a=5726,2$ and $b=0,0002$ and the equation will have the following form:
 $\hat{y}_i=5726,2+0,0002x$

Figure 1: The correlation between the lump-sum tax and the firms' turnover

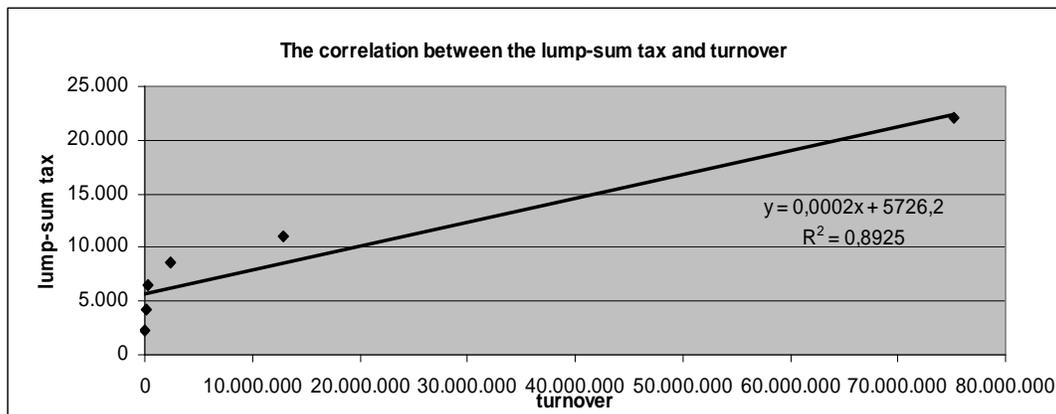


Table 5: Data analysis - Regression in Excel

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0,9447
R Square	0,8925
Adjusted R Square	0,8656
Standard Error	2580,0387
Observations	6

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	221.053.600	221.053.600	33,21	0,0045
Residual	4	26.626.400	6.656.600		
Total	5	247.680.000			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	5.726,216	1.205,070	4,752	0,009	2.380,406	9.072,025
Income	0,0002	0,00004	5,763	0,004	0,00012	0,00033

The interpretation of results in the ANOVA table:

Intercept: $a = 5.726,216$

- is called the regression coefficient, representing the slope of the straight line
- 0, so between the level of the lump-sum tax and the amount of turnover is a direct connection
- taking into consideration that t-stat is 4,752 and the threshold of significance P-value is $0,009 < 0,05$, that means that the coefficient is significant.

Regarding the b coefficient (0,0002), the t-stat is 5,763 and the threshold of significance P-value is $0,004 < 0,05$ and so the coefficient is significant.

Table 6: The F Test

Variance of source	SS (Sum of Squares)	df (degree of freedom)	MS=SS/df (Squares media)	F (test F)	Significance F
Regression	SSR=221.053.600 $\Delta_x^2 = \sum_{i=1}^n (\hat{y}_i - \bar{y})^2$	k=1	221.053.600 $s_x^2 = \frac{\Delta_x^2}{k}$	Test F = 33,21 $F = \frac{s_e^2}{s_{y/x}^2}$	0,045 < 0,05
Residual	SSE=26.626.400 $\Delta_e^2 = \sum_{i=1}^n (y_i - \hat{y}_i)^2$	n-k-1=4	6.656.600 $s_u^2 = \frac{\Delta_u^2}{n-k-1}$		
Total	SST=SSR+SSE $\Delta_y^2 = \sum_{i=1}^n (y_i - \bar{y})^2$ SST=247.680.000	n-1=5	$s_y^2 = \frac{\Delta_y^2}{n-1}$		

Testing the validity of the regression model:

- the null hypothesis H_0 : the model is not statistically valid (due to scattering values determined by time factor is not significantly different for spreading the same values due to chance)
- the alternative hypothesis H_1 : the model is statistically valid
- Decision: if $F_c > F_{\alpha; k; n-k-1}$, than H_0 is rejected. Taking into consideration the fact that 33,21 is greater than 7,71, the H_0 hypothesis is rejected, and so the model is a valid one

Table 7: Summary Output – Regression statistics

Multiple R	0,9447	$R_{y,x} = \sqrt{\frac{\sum_{i=1}^n (\hat{y}_i - \bar{y})^2}{\sum_{i=1}^n (y_i - \bar{y})^2}} = \sqrt{1 - \frac{\sum_{i=1}^n (y_i - \hat{y}_i)^2}{\sum_{i=1}^n (y_i - \bar{y})^2}}$
R Square	0,8925	$R^2 = 1 - \frac{\Delta_e^2 / n - k - 1}{\Delta_y^2 / n - 1}$
Adjusted R Square	0,8656	$R^2 = \frac{\Delta_{y/x}^2}{\Delta_y^2} = 1 - \frac{\Delta_e^2}{\Delta_y^2} = \frac{\sum_{i=1}^n (\hat{y}_i - \bar{y})^2}{\sum_{i=1}^n (y_i - \bar{y})^2}$
Standard Error	2580,0387	$s_e = \sqrt{\frac{\Delta_e^2}{n-2}} = \sqrt{\frac{\sum_{i=1}^n (y_i - \hat{y}_i)^2}{n-2}}$
Observations (n)	6	

The interpretation of results in the Summary Output table:

- R= 0.9447 shows that between the level of the lump-sum tax and the amount of turnover is a strong link.
- R²= 0.8925 shows that 89% of the level of the lump-sum tax is explained by the amount of the turnover.
- The standard medium deviation of errors is s_e = 2580,0387. If this indicator is zero it means that all points are on the regression line.
- The last line refers to the number of observations n.

Table 8: The Residual Output

RESIDUAL OUTPUT

Observation	Predicted Minimum annual tax	Residuals
1	5.732,01	-3.532,01
2	5.755,95	-1.455,95
3	5.776,49	723,51
4	6.252,88	2.347,12
5	8.598,94	2.401,06
6	22.483,74	-483,74

5. Conclusions

After analysing the existing data and the literature in the field, a set of conclusions can be drawn.

Taking into account the fact that the coefficient of correlation is 94,47%, we can say there is a strong link between the two variables and that 89% of the level of the lump-sum tax is explained by the amount of the turnover and the rest by other factors.

The regression coefficient, representing the slope of the straight line, *a* is greater than 0, so between the level of the lump-sum tax and the amount of turnover is a direct connection.

We can notice that the fiscal relaxation is directly proportional with incomes. The small and micro-enterprises are more burdened by the lump-sum tax than the medium-sized and large companies.

For the firms that have more than 21,5 million lei as previous year turnover, the amount of the lump-sum tax due to the state increases, but not in the same proportion as for the other companies.

As a recommendation, in order to have had a fair fiscal policy, the authorities should have considered a progressive taxation and the mathematical model should have been an exponential one, not a linear one.

In order to be efficient, the lump-sum tax must be established depending on the average profit upon activity categories. The Council for SMEs in Romania also supports the introduction of a tax differentiated by branch, in proportion to the scale of activity. "If it is given up, we propose the introduction of this tax to be done through a totally changed vision. Social and economic analysis should be done and applied only to the sectors where the multinational firms and the large companies operate, which declare a low profitability level, namely the oil branch - the chemical and petrochemical industry, alcohol industry, tobacco and the gambling sector", reads a press release of the CNIPMMR, remitted to the Curierul Național.

"Such an approach ensures a rigorous economic and social substantiation, preventing discrimination, encouraging some areas, companies or individuals. The CNIPMMR considers that the selection of the areas where the tax will be applied should be done by rigorous economic and social bases, by economic analyses and impact studies," the release reads.

6. References

- Antonescu, M.; Antonescu, L. (2010), *The lump-sum tax – solution for diminishing tax dodging and raising of the budgetary incomes*, p. 43-48
- Chicoș C. (2010), *SMEs want lump-sum tax only for big companies*, available at <http://www.curierulnational.ro/print/133442>
- Crăciuneanu, V.; Săvoiu, Gh. (2010), *A brief history of taxation and the solution to the lump-sum tax, in times of crisis and recession*, Petroleum-Gas University of Pitești Bulletin, Economic Sciences Series, vol. LXII, no.3/2010: 38 – 47
- Mazilu, C. (2009), *Romanian Tax Highlights*, available at http://www.ccer.ro/userfiles/articlesFiles/EF9AE235d01_04281603.pdf
- Petre, M.C; Bontaș C.B. (2010), *Impact of lump-sum tax in Romania*, Romanian Economic and Business Review, vol. 4, no. 4, 157-164
- Emergency Ordinance no. 34 as of 11.04.2009 (Official Gazette no. 249/14.04.2009)

THE RATING SYSTEM LICOS BUDGETARY INSTITUTIONS

BECHIȘ Liviu

Ph. D. Assistant professor, Faculty of Economics, Babes-Bolya University, Cluj-Napoca, Romania, liviubechis1960@hotmail.ro

Abstract: *Worldwide have been using many financial indicators and fixed rules for budgetary institutions, but few of them were gathered in an evaluation program, able to measure both individual components and system as a whole. That is why below we present a rating system applicable to budgetary institutions. Each letter of the word LICOS measure key are as of operations in budgetary institutions: Liquidity, Assets, operational costs, and solvency.*

Key words: liquidity, current assets, solvency ratings

JEL classification: H70

1. The importance of rating LICOS

Performance monitoring of budgetary institutions is the most important feature of LICOS system. This system was designed as a "tool" of management that goes beyond simply identifying problems arising from a budgetary institution. It helps managers to find solutions based on the serious deficiencies of the institution. Using the system allows managers to quickly and accurately identify problem areas and make necessary changes before problems worsen. In fact, LICOS is an "early warning system" that provides valuable information managers. Use of standardized financial indicators used by various criteria eliminates credit institutions to assess their operations.

2. Method and results

LICOS system is unique and distinguished from other monitoring systems. It was first designed as a management tool and then became an effective supervisory mechanism. Each letter of the LICOS addresses a different area, but essentially, the institution's budget.

LIQUIDITY L.

Liquidity indicators show if budgetary institution so that the cash given to honor outstanding loans and cash reserve requirements, while at the same time, minimize the amount of productive funds.

LIQUID ASSETS - CURRENT (<30 days) / Equity

Purpose: Measures the cash reserves held by the institution and the degree to which can meet other obligations, if immediate debt (under 30 days).

Components:

Liquid Assets

B Current liabilities <30 days

c. Equity

Model: $(a - b) / c$

Objective: At least 15%

I. ACTIVE ASSETS AND QUALITY NECURRENT

The indicator measures the impact of assets that generate no income: active noncurrent and how to finance them.

NECURRENT ASSETS / TOTAL ASSETS

Purpose: Measures the percentage of total assets not producing income.

Components:

Total Assets a Noncurrent

B Total Assets

Model: a / b

Objective: Less than or equal to 70%

C. EFFECTIVE FINANCIAL STRUCTURE

Assess the composition of the most important indicator of the balance sheet accounts. An efficient financial structure is necessary for safety, and achieves real growth.

BUDGET RECEIVABLES NET / TOTAL ASSETS

Purpose: Measures the percentage of total assets invested in the investment portfolio budget.

Components:

Claims a net budget

B Total assets

Model: a / b

Objective: 5%

O. OPERATING EXPENSES / TOTAL ASSETS

Purpose: Measure the costs associated with asset management institution budget. Costs are measured as a percentage of total assets and shows how efficient or inefficient operational institution.

Components:

a. Total operating expenses

B Total assets at the end of the year

Model: a / b

Objective: <10%

S. REQUIREMENT

Purpose: Measures the degree of protection that provides budgetary institution equity, the liquidation of assets and liabilities.

Components:

A. Current

B Current liabilities

C Active noncurrent

D Equity

H Total social fund initially of members

Model: $[a-b) + c] / d$

Objective: greater than 110%

Table 1: RatingsystemLICOS

LICOS RATIOS	PLATINUM (3 pct.)	GOLD (2 pct.)	SILVER (1 pct.)	Unsatisfactory (0 pct.)
Current ratio: Liquid Assets- Current Debts/Equity (L)	$\geq 15\%$	$\geq 15\%$	$\geq 15\%$	$< 15\%$
Non current assets ratio: Noncurrent assets/Total Assets (I)	70%-79,99%	60%- 69,99%	50%-59,99%	$< 50\%$,
Receivables ratio: Receivables/Total Assets (C)	$< 5\%$	5%-9,99%	10%-14,99%	$\geq 15\%$
Operational Expenses Ratio: Operational Expenses/ Total Assets(O)	$< 30\%$	30%- 39,99%	40%-49,99%	$\geq 50\%$
Solvency (S)	$> 110\%$	$< 110\%$	$< 109\%$	$\leq 108\%$

Source: Own calculus

The analysis undertaken in the County Councils of North-Western Region, based on balance sheet and accounts resulting in two consecutive years resulted rating 9, that it is within the BB-rating, which signifies a medium risk to a reduced risk, and that is assigned the rating "GOLD".

Table 2: Notation rating

Points	Rating	Significance	Qualifying
15	AAA	No risk	Platinum
14	AA-	Minimum risk	Platinum
13	AA	Minimal risk-moderate	Platinum
12	A	Moderate risk- medium	Platinum
11	A-	Moderate risk	Platinum
10	BBB	Medium risk	Gold
9	BB-	Medium-low risk	Gold
8	BB	Medium-moderate risk	Gold
7	B	Medium-high risk	Gold
6	B-	Medium-highest risk	Gold
5	CCC	High risk	Silver
4	CC-	High-average risk	Silver
3	CC	High-moderate risk	Silver
2	C	High-risk high	Silver
1	C-	High risk	Silver
0	D	Bankruptcy	Bronze

Source: Own calculus

3. Conclusions

This system creates a universal financial language that each can speak and understand. An important result can be considered to improve communication, which allows a better understanding of basic concepts with a commitment to achieve uniformity and enhance the quality of each institution, individual scale, improving operational areas deficient. Standardization of financial information eliminates diversity and provides an efficient and effective performance comparison of budgetary institutions nationwide.

A very important aspect of comparative ratings LICOS is objectivity, whereas qualitative rankings are included that in our opinion are subjective. This is a significant difference from other rating systems that provide the management team a score based on subjective judgment and general analyst.

Besides its usefulness as a management tool, the system provides a supervision unit LICOS. Budgetary institutions can use financial ratios generated by LICOS to make quarterly or monthly analysis of all key areas of activity of budget institutions. These evaluations are very important to observe trends and to detect areas of poor operating budget institutions.

By standardizing key financial indicators, all stakeholders have the same thing which is important for those who consider it is important for the institution budget manager. The research undertaken in mind that we had to assess audit risk, budgetary institution established rating should be evaluated by a system as LICOS. As a general conclusion we can say that financial analysis procedures and methods through its system of financial indicators and ratings systems built on a linked system of indicators can help assess correct errors, fraud and the risks it is exposed always a budgetary institution.

4. References

- Abramowitz, J.; Adkins, R.; Rogers, J.H. (1983) *Economics and the American Free Enterprise System*. Globe Book Company, New York, USA.
- Alijoyo, A. (2004) *Focused Enterprise Risk Management*. (1st ed.). PT Ray Indonesia, Jakarta, 2.
- Alexander, C. and Sheedy, E. *The Professional Risk Managers' Handbook: A Comprehensive Guide to Current Theory and Best Practices*. (1st edition), Wilmington, DE: PRMIA Publications, 2004.
- Backer, M.; Elgers, P.T. and Asebrook, R.J (1988) *Financial Accounting*. Harcourt Brace Jovanovich, Publisher, Orlando, Florida, USA.
- Bătrâncea, I., ș.c. (2012) *Metode și tehnici de analiză financiară*, Cluj-Napoca: Editura Risoprint.

THE PRESENT SITUATION OF THE ABSORPTION OF THE STRUCTURAL AND COHESION FUNDS IN ROMANIA: THE CONSEQUENCES OF INTERRUPTION OF PAYMENTS THROUGH SECTORAL OPERATIONAL PROGRAM HUMAN RESOURCE DEVELOPMENT

BERICA Corina

Ph.D. Student, Doctoral School of Economics, Alexandru Ioan Cuza University, Iași, Romania, corina.berica@yahoo.com

COCRIȘ Vasile

Ph. D. Professor, Doctoral School of Economics, Alexandru Ioan Cuza University, Iași, Romania, vcocris@uaic.ro

Abstract: *Romania has the opportunity to eliminate existing disparities between its regions through the absorption of the Structural and Cohesion Funds provided by the European Union. Unfortunately Romania had many problems in implementation and continues to have if you do not take the most effective measures for recovery. One of the most tensionante moments was the interruption payments for Sectoral Operational Program Human Resource Development. After the problems that must face, we try to find answer to your question: these funds contribute to the economic growth of the country or are only a substantial effort of human and financial resources, without a visible result?*

Key words: Structural and Cheosion Funds, interruption payments, impact, economical growth

JEL classification: F35, O11, O52

1. Introduction

Romania is economically, financially and socially, one of the weakest in the European Union. To alleviate these discrepancies, i was offered an opportunity in the period 2007-2013 to access European funding totalling Euro 19.67 billion for major interventions in the following areas: infrastructure development, economic competitiveness, administrative capacity, human capital, territorial dimension.

Financial economic crisis started to feel strong in Romania since the fourth quarter of 2008. Along with the economic crisis came a strong decrease of budgetary incomes related to the difficulty of financing budgetary expenses, a deficit in the amount of credit provided by banks.

Theoretically have taken a series of measures to increase the rate of absorption of the structural and Cohesion Funds, but the effects are hardly appear. Most affected are the beneficiaries of projects that support as a disruptive factor in the attainment of the objectives and indicators is the lack of liquidity of the progressive diminishing, particularly due to being unable to pay its own financial contribution and to engage in the activities undertaken. On the other side, the authorities which supervise the implementation of these projects would have to carry on normal activities, but due to the low standard of living and the low pay, these structures gives up and this shortage affects, in particular, payments to beneficiaries.

According to the last statistics offered by the European Commission, we are on the last place regarding the absorption rate of the Structural and Cohesion Funds. Even if we try to emphasize the factors that influence this report, considering all the solutions offered by the parts involved, the changes are not considerable. The impact created by the absorption of the Structural Instruments gives the measure of this situation, no matter if we would occupy the fifth place or the last one among the rest of the EU members.

2. Literature Review

The European Union aims at reducing the economic and social gaps among the EU countries using the Structural Instruments. The European Fund for Regional Development and the Social European Fund constitute the Structural Funds and these last ones along with the Cohesion Fund form the Structural Instruments.

It is very important to emphasize the impact of these European funds upon the economical growth. The image of irredeemable financing creates a perpetual satisfaction feeling and an enrichment desire. John Bradley and Gerhard Untiedt have identified in their work Do economic models tell us

anything useful about Cohesion Policy impacts? A comparison of HERMIN, QUEST and ECOMOD, 4 main stages in analysing the impact of the cohesion policy:

Stage 1: The cohesion policy – a challenge

Stage 2: The creation of the interventions inside the cohesion policy

Stage 3: The methodology for evaluating the impact of the cohesion policy

Stage 4: The presentation and analysis of the results

For quantifying the impact of the Structural and Cohesion Funds, many authors use the mathematic – econometric model type HERMIN, model focused upon the main features of the marginal economies of EU (Bradley and Untiedt, 2007). Using such a model for the Romanian economy implies the analysis of the four very important blocks that constitute the model based on the studies elaborated so far (Ibraim, 2010).

Ibraim Kagitc, in his PhD thesis, "Improving the attraction and use of structural and cohesion funds of the European Union in financing the Romanian projects", has calculated the impact of the Structural Funds upon the modification of the main variables (GNP and the gross capital formation), econometrically by estimating two regressions which follow the way in which the variation of the funds generate the variation of the two variables indicated above (Ibraim, 2010). The conclusion of the analysis has shown that the impact of these financial instruments upon the GNP and upon the gross capital formation has not been a considerable one, although we have to mention that Romania needs reliable and realistic projects for attracting European funds.

Gabriela Marchis, in her PhD thesis, "The Impact of the European Union Extension upon the Regional Strategies and Policies the Role of the Structural Funds", has chosen a multiple linear regression model for testing the existence of the relationship between the GNP of each county and the volume of the investments, the working population, the number of projects and the absolute absorption of the Phare funds during the programming period 2000 – 2006 (Marchis, 2008). The F test of global signification has shown that the regression is adequate for the purpose of predicting the GNP of the county and the observed data have allowed the identification of a linear valid model especially between the volume of investments and the county's GNP.

The literature offers multiple possibilities for analysing the impact of the structural instruments in accomplishing the economical convergence. Thus, some specialists recommend macroeconomic simulation models (Bradley et al., 2006), this version being accepted by the European Commission while others choose regression econometric models oriented towards specific dimension, coordinates, influence factors (Boldrin and Canova, 2001; Ederveen et al., 2002; Fuente, 2003).

3. Controversial situation of Sectoral Operational Program Human Resource Development

The Structural Instruments are specially designed for contributing to reducing the gaps in seven domains very important for our country. Thus, seven Operational Programmes (OP) have been elaborated in the context of the "Convergence" objective (meant to accelerate the economical development for the regions left behind, by investments in human capital and in the basic infrastructures).

Table 1 shows the stage of the Structural and Cohesion Funds absorption identified in the column for internal payments towards beneficiaries and intermediary payments from the CE.

The Ministry of European Affairs (MAEur) makes a few clarifications regarding the definition of the absorption rate (Press release, 2011, <http://www.dae.gov.ro>):

- Absorption in national plan (17,77%) – quantified by the real payments towards the beneficiaries accounts (pre-financings and reimbursements from community funds and from the state budget).
- External or effective absorption (6,56%) – transfer of the advance from the European Commission at programme level and transfer of the intermediary payments (reimbursements).

Table 1: The stage of absorption of the Structural and Cohesion Funds for each Operational Programme the 30th of March 2012

Program me	Allocation EU 2007-2013 (mil. Lei)	Projects submitted		Projects approved		Contracts signed		Interim payments to Beneficiaries		Declarations of expenditure submitted to the EC		Interim payments from the EC	
		No.	Total Value mil. Lei	No.	EU Value mil. Lei	No.	EU Value mil. Lei	mil Lei	%	mil. Lei	%	mil. Euro	%
OSP Transport	19853	129	42602	77	11430	62	7801	1386	6,98	283,85	6,22	279,86	6,13
OSP Environment	19620	465	35955	328	17867	259	17543	2746	12,66	197,17	4,37	152,71	3,38
OP Regional	16201	8093	55441	3104	14716	2723	13449	4969	27,77	656,09	17,61	437,24	11,73
OP Human Resource Development	15114	10217	43257	2999	15160	2468	12687	4627	28,85	225,01	6,47	190,33	5,48
OP Competitiveness	11106	11806	68990	3313	7914	2275	5007	2131	16,97	164,47	6,44	164,47	6,44
OP Administrative Capacity	904	1371	3675	397	981	354	709	128	13,36	23,71	11,40	18,89	9,08
OP Technical Assistance	740	102	461	86	302	77	266	108	14,43	19,65	11,54	16,73	9,83
TOTAL	83538	32183	250381	10304	68370	8218	57462	16095	17,77	1569,95	8,17	1260,23	6,56

Source: The Ministry of European Affairs (MAEur), <http://www.dae.gov.ro/admin/files/Stadiul%20absorbției%20la%2031%20martie%202012.pdf>

The results of absorption are not encouraging and is a greater disappointment when we observe that OSP Transport were barely attracted 6,13% of 2007-2013 allocation for modernisation and the development of national transport networks, promoting transport by rail, in land waterway and intermodal. Ourselves: we stay so well in this chapter so that we allow ourselves to lose this opportunity? Most blame the necessitated bureaucracy, getting notices, etc..

Until recently in the first place is OP Human Resource Development, a program in which the majority prefers to apply considering that obtain financing more easily compared to other bureaucracy imposed on operational programmes. This program has been dethroned by the OP Regional dealing with infrastructural improvement.

Indeed the implementation of new programs and services for the development of entrepreneurial culture, developing and promoting modern management skills, are very important, but up to a certain

point. At first it was understood that many people needed training, mentoring, but we can take advantage of their new skills to access more money for the environment, transport, development of administrative capacity.

Why there is still a gap so great between the amounts paid to beneficiaries (17,77%) and sums reimbursed by the European Commission (6,56%)? These 11 points signifies the huge for state budget, a goal which cannot be sustained for a long period. The OP Human Resource Development gap is much bigger. Have made payments to beneficiaries of 4627 mil. Lei- 28, 85%, reimbursement from European Commission, just 5,48% .

Although it has a high absorption rate by OP Human Resource Development, Romania received a news not quite happy. On February 23, 2012, the European Affairs Ministry has received the decision by the European Commission to interrupt the payment deadline for applications related to the OP Human Resource Development. This situation was not surprising for state authorities, they are informed in advance of the decision imposed on Romania.

What were the causes of this interruption?

The Ministry of European Affairs led by Minister Leonard Orban being accused of this situation, say that the main reason of this interruption is ignoring by the OP Human Resource Development Romanian Authority, recommendations of Auditors who asked for 2011 financial corrections on wrong managed programs in 2010. As a result, the European Commission, stopped (not paused) payments on the OP Human Resource Development, interruption hopes to take up to late April. The Audit found weaknesses in procedures for the selection of projects and the first level verification.

For this failure European Commission will discontinue reported the time limit for payment applications submitted by the MemberState for a period, but not exceeding 6 months. Romania has gone through such a thing when for OP Regional were suspended the applications for reimbursement because are finding problems in public procurement procedures.

What are the consequences on the beneficiaries?

Romanian authorities consider that there will not be consequences for the beneficiary, the managing authority will continue to make payments. However, Minister Leonard Orban considers that Romania's image through this interruption may be degraded, with negative effects on the cohesion policy budget for 2014-2020. The European Commission will not forget, will impose conditions of increasingly restrictive conditions for eligibility and selection of beneficiaries will be tougher. It all depends on the financial capacity of Romania to make further payments for the development of European projects. In an indirect, beneficiaries may suffer because the burden of the country will increase if all else shall carry out payments without cash amounts from the European Commission. This situation cannot last forever.

The main measures to remedy the interruption of payments through OP Human Resource Development

As soon as it was found out that Romania will interrupt payments through OP Human Resource Development had taken a series of measures ranging from the dismissal of the management of the operational programme, until the advent of 4-5 instructions in a week.

In a first phase, Director of management authority was dismissed, being accused of lacking a management that has led to the introduction of this unpleasant situation.

In the weeks that followed a new guideline was appointed in the person of Mrs. Carmen Rosu which apparently is very committed to implement the measures necessary to continue the payments. It has proposed the following regulatory measures:

- statement on their own authority, signed by the parties, confirming that they haven't offered, directly or indirectly of any kind for public official to obtain financing (press release-February 20, 2012, Ref: Measures OP Human Resource Development);
- placing an application "unique Register of applications for reimbursement and, prefinancing of applications" which aims at assessing the applications for reimbursement and prefinancing and recovery of VAT, with the purpose of compliance with the deadlines laid down in the financing agreements (MA OP Human Resource Development, Instruction no. 57);
- the obligation of officials within the Management Authority and intermediate bodies to offer audiences every Thursday from 12 noon (press release-February 20, 2012 Ref: Measures OP Human Resource Development);

- obligation to beneficiaries to fill in application "Actionweb", activities under the projects in "Plan activities" modulus (MA OP Human Resource Development, Instruction no. 56);
- require recipients to forward to March 9, 2012 (signed, stamped envelope, scanned) referred to in article.27 by order of 2548/2009, to perform accounting reconciliation between the accounts of the Management authority and the beneficiaries (MA OP Human Resource Development, clarification);
- obligation beneficiaries to give a statement on his own responsibility for the veracity of the data entered in target group in ActionWeb (MA OP Human Resource Development, Instruction no. 54);
- the elimination of bureaucracy and simplifying procedures for the verification applications for reimbursement, wishing to respect the period of 45 calendar days, as there are beneficiaries receiving repayment after 14-16 months after the date of submission of the application (www.mmuncii.ro);
- sending of 80 officials from the intermediate bodies to check the progress of implementation of projects (www.mmuncii.ro);
- approval of 3 Judgment of the Government shall be supplemented the number of posts in the management of European funds: for OP Human Resource Development: Judgment supplementing with 35 number of posts for the Regional Authority, intermediate bodies and Management of institutions subordinated to the Ministry of Labour, Family and Social Protection (Romanian Government, press release, www.gov.ro);
- reopening of the line telephone "Help Desk" where officials of the intermediate bodies will provide answers to the questions of beneficiaries (OP Human Resource Development, press release).

All these measures were taken in the course of a week without giving too much information on their application. An example would be Instruction no. 56, whereby the beneficiaries must introduce activities relating to each quarter of 2012. Electronic module is not well structured, intermediate bodies could provide information to help the beneficiary because it was covered only by the IT Department of MA OP Human Resource Development. To the pain of the beneficiaries, the officials do not respond at the phone or any referral made by email. With only 1 day before expiry the deadline responsible for "Plan activities" have been carried out in part amendments for data entry, without having to send an email notification or public announcement. Another shortcoming of this method lies in the impossibility of placing a transnational partner, the data being passed only in Romania counties.

From all those presented above we can only draw one conclusion: all these measures have been taken in a moment of despair, to be able to complete a corrective vision report to be transmitted to the European Commission as urgent to unblock funds. Has anyone thought of it as it will affect the beneficiary or if actually implemented with only positive effects or they were just descriptive?

4. Data

To analyze the impact of absorption of the Structural and Cohesion Funds at national level on the growth of the economy of Romania had chosen to test a simple regression to emphasize the extent to which change in payments to beneficiaries of the Structural and Cohesion Funds lead to change in Gross Domestic Product (GDP). We have done tests and Granger to see causation between variables.

The data have been collected monthly starting January 2007 until September 2011, as following:

- the payments of the beneficiaries are shown in the Appendix 1 offered by the Authority for Supervising and Implementing the Structural Funds (ACIS) offering a monthly report of the absorption situation.

- Gross Domestic Product adjusted series-stationary, have been extracted from the statistics offered by the EUROSTAT website.

Using the statistical tool like Eviews 7 program. 0, we intend to observe an econometric:

- relationship between the value of Gross Domestic Product (lei) labelled as *GDP* and payments towards the beneficiaries (lei) labelled as *PO*.

To begin with, I turned, using MatLab and cubic spline interpolation function, the values of the quarterly GDP in monthly values in order to get more comments in an econometric model, in view of the short period of the sample analysed.

5. Empirical Results

The Unit Root test shows that the variable “GDP” is stationary in the first difference at the level of 10%, the other two variables being stationary at any level, still from the first difference.

Table 2: Augmented Dickey-Fuller Test Equation for GDP

Null Hypothesis: GDP has a unit root

Exogenous: Constant

Lag Length: 8 (Automatic - based on SIC, maxlag=10)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.946010	0.7648
Test critical values:		
1% level	-3.574446	
5% level	-2.923780	
10% level	-2.599925	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(GDP)

Method: Least Squares

Date: 04/21/12 Time: 08:26

Sample (adjusted): 10 57

Included observations: 48 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	-0.004566	0.004827	-0.946010	0.3501
D(GDP(-1))	2.535835	0.159155	15.93309	0.0000
D(GDP(-2))	-2.889882	0.421231	-6.860572	0.0000
D(GDP(-3))	1.648949	0.539986	3.053690	0.0041
D(GDP(-4))	-0.236411	0.399086	-0.592381	0.5571
D(GDP(-5))	-0.177596	0.187836	-0.945488	0.3504
D(GDP(-6))	0.003936	0.152154	0.025870	0.9795
D(GDP(-7))	0.140191	0.141497	0.990771	0.3281
D(GDP(-8))	-0.096179	0.075370	-1.276087	0.2097
C	633.1916	619.0888	1.022780	0.3129
R-squared	0.977819	Mean dependent var		772.6979
Adjusted R-squared	0.972566	S.D. dependent var		1368.339
S.E. of regression	226.6425	Akaike info criterion		13.86768
Sum squared resid	1951939.	Schwarz criterion		14.25751
Log likelihood	-322.8242	Hannan-Quinn criter.		14.01500
F-statistic	186.1309	Durbin-Watson stat		2.154536
Prob(F-statistic)	0.000000			

Table 3: Augmented Dickey-Fuller Test Equation for PO

Null Hypothesis: PO has a unit root

Exogenous: Constant

Lag Length: 2 (Automatic - based on SIC, maxlag=10)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.906454	0.7795
Test critical values:		
1% level	-3.546099	
5% level	-2.911730	
10% level	-2.593551	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(PO)

Method: Least Squares

Date: 04/21/12 Time: 08:28

Sample (adjusted): 4 62

Included observations: 59 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PO(-1)	-0.083547	0.092169	-0.906454	0.3686
D(PO(-1))	-0.770818	0.132833	-5.802889	0.0000
D(PO(-2))	-0.488321	0.122199	-3.996109	0.0002
C	41373403	30220078	1.369070	0.1765
R-squared	0.479451	Mean dependent var		12474811
Adjusted R-squared	0.451058	S.D. dependent var		2.23E+08
S.E. of regression	1.65E+08	Akaike info criterion		40.74869
Sum squared resid	1.50E+18	Schwarz criterion		40.88954
Log likelihood	-1198.086	Hannan-Quinn criter.		40.80368
F-statistic	16.88592	Durbin-Watson stat		1.962020
Prob(F-statistic)	0.000000			

The values analysed weren't logarithmate because the results were negative. Then we noticed a Granger causality conducted under a VAR:

Table 4: VAR Granger Causality

VAR Granger Causality/Block Exogeneity Wald Tests

Date: 04/22/12 Time: 23:17

Sample: 1 62

Included observations: 49

Dependent variable: GDP

Excluded	Chi-sq	df	Prob.
PO	19.70939	8	0.0115
All	19.70939	8	0.0115

Dependent variable: PO

Excluded	Chi-sq	df	Prob.
GDP	1.698736	8	0.9889
All	1.698736	8	0.9889

Granger causality measures are constructed to explore the causal relationship between two time series. The idea of Granger causality is a pretty simple one, namely that a time series X_t Granger-causes another time series Y_t if Y_t can be predicted better by using the past values of X_t than by using only the historical values of Y_t .

The results of Table 4 shows the causality results for the full sample period, in which it can be observed that the direction of causation is unidirectional from GDP to PO. The relationship between changes in GDP and changes in payments by the Structural and Cohesion Funds, is accepted the alternative hypothesis with a probability of 99.98% (with Relevant threshold of 0.0115), there is 99.98% chance that a causality occur directly between the two variables.

Explanations for the results achieved may refer to:

- the time gap in which the beneficial effects of these irredeemable funds are felt in economy, the transmission mechanism being made more difficult by the negative implications of the economical and financial crisis;

- many of these projects are still in progress;
- the analysed period is too short for emphasizing a convincing result (financial allocation being for the period 2007-2013);
- the possibility of gaps between the time of absorption of funds and change in GDP;
- very low absorption rate of the Structural and Cohesion Funds;
- interruption of transmission and settlement of claims for reimbursement from the European Commission on certain operational programmes;
- sustaining the co-financing and settlement of claims for reimbursement submitted by the beneficiaries of State budget until the European Commission outstanding the applications.

In conclusion we can say that although Romania continues to face a number of problems, with the lowest rate of absorption of the structural and Cohesion Funds, with lack of liquidity from the State budget to support for a protracted period costs to beneficiaries may notice a relationship between the level of payments to beneficiaries and gross domestic product.

6. Conclusions

The Structural Instruments represent the link between stability and the development that Romania needs. By the absorption of the European funds, focused on our country's priority, the economical growth will have an ascendant trend. And, the bigger the economical development, the smaller will be the burden of the external debt.

All the problems facing Romania in the cohesion policy 2007-2013 can generate a negative impact both at the microeconomic level (at the level of the beneficiary) and at the macroeconomic level. Feel the effects in terms of both parties involved in this process, but on the whole we can say that a high absorption of European funds intended to contribute to the significant economic growth.

This is supported both by an econometric test model, but also through all available quality elements: courses and training, jobs created, modern infrastructure for research and development-innovation, water purification stations, highways and roads upgraded, etc.. There are few opportunities to romanian people at the time of signing the contract-reimbursable funding.

Interrupted payments, penalties, excessive bureaucracy, lack of transparency and communication between the customer and the authorities dealing with supervision and implementation of these funds represent difficulties that over time and with a great empowerment may be restricted, even removed. But time passes, the current schedule draws to a close, and Romania is likely to lose money with negative effects on the next cohesion policy, if fails to mobilize the proposed amounts to be absorbed.

7. References

- Bradley J., Untiedt G. (2007), *Do economic models tell us anything useful about Cohesion Policy impacts? A comparison of HERMIN, QUEST and ECOMOD*, Working Papers 3-2007, GEFRA - Gesellschaft fuer Finanz- und Regionalanalysen
- Ibraim Kagitci (2010), *The Efficiency Of The Attracting And Use Of The Structural And Cohesion Funds From The European Union In Financing Of Projects In Romania*, Phd Thesis
- Marchis G. (2008), *The impact of EU enlargement on Regional Strategies and Policies. The role of Structural Funds*, Summary of Phd Thesis
- Bradley J., Mitze T., Morgenroth E., Untiedt G. (2006), *How can we know if EU cohesion policy is successful? Integrating micro and macro approaches to the evaluation of Structural Funds*, Working Papers 1-2006, GEFRA - Gesellschaft fuer Finanz- und Regionalanalysen
- Boldrin M., Canova F. (2001), *Inequality and convergence in Europe's regions: reconsidering European regional policies*, Economic Policy, Volume 16, Issue 32, pages 205–253
- Ederveen, S., J. Gorter, R. de Mooij and R. Nahuis (2002). *Funds and Games: The Economics of European Cohesion Policy*. CPB Special Publication No. 41
- Fuente A., (2003). *El impacto de los Fondos Estructurales: Convergencia real y cohesi interna*, UFAE and IAE Working Papers 572.03, Unitat de Fonaments de l'Anàlisi Econòmica (UAB) and Institut d'Anàlisi Econòmica (CSIC).
- Ministry of Labor, Family and Social Protection - OP Human Resource Development, Instruction no. 57, 20/02/2012
- Ministry of Labor, Family and Social Protection - OP Human Resource Development, Instruction no. 56, 17/02/2012

- Ministry of Labor, Family and Social Protection - OP Human Resource Development, Instruction no. 54
- www.dae.gov.ro
- www.mmuncii.ro
- www.insse.ro

THE BUDGET OF THE PUBLIC INSTITUTION – A PROGRAMMING AND EXECUTION INSTRUMENT FOR INCOMES AND EXPENSES

BOBEȘ Florina-Maria

Ph. D. Assistant professor, Faculty of Economic Sciences, Lucian Blaga University of Sibiu, Sibiu, Romania, florina11@yahoo.com

Abstract: *This paper tries to capture aspects regarding the finances of public institutions in Romania, and also the analysis of the budgets of these institutions, according to the funding system. I have started from the premise that, in the current period, the public institutions have an important role due to the large volume of financial resources allocated to them that need to be managed and used as efficiently as possible.*

Key words: budget, public institutions, finance

JEL classification: G 30, H 61

1. Introduction

In the market economy, through public finances, the state provides the members of the society a wide and diverse range of public utilities. The participation of public authorities to meet the collective needs is determined by the inability of the private sector to provide certain goods and services. The production of such goods and services is entrusted to the public sector, which receives their cost mainly from the public financial funds, and not from each beneficiary. The public authorities through which the state ensures meeting the collective needs of the members of the society are mainly represented by public institutions. The large number of public institutions has led to creating a hierarchy on geographical criteria. Thus, public institutions are run by primary, secondary or tertiary credit accountant.

The credit accountant is represented by the individual empowered to fulfill a leadership position in a state body, in an institution vested by the legislature with the right to dispose of the budget credits approved through its own income and expenses budget of the institution in matter.

The primary credit accountants are ministers, leaders of public authorities, leaders of other bodies of central government and leaders of autonomous public institutions. In the Chamber of Deputies and in the Senate the primary credit accountants are their general secretaries. In the case of the local budgets, the primary credit accountants are the presidents of the county councils, mayors of the administrative units (cities, towns, villages) and the general Mayor of Bucharest.

The primary credit officers may delegate the right to approve the use and distribution of budget appropriations to the rightful substitutes. The primary loan credit accountants approve expenditures from their own budget and assign the budgetary credits approved for the budgets of the hierarchically inferior public entities (whose leaders are secondary or tertiary loan credit accountants), in relation with their tasks contained in the respective budgets.

The secondary credit accountants are the leaders of the public institutions with legal personality that have their own budget, and are under the suborder of the primary credit accountants, which receive credits for both covering their own expenses and for allocating credits for the tertiary credit accountants held in their suborder.

The secondary credit accountants have similar rights to the primary credit accountants, except that they receive budget appropriations from the primary credit accountants, while the latter receive them directly from the Ministry of Public Finances.

The tertiary credit accountants are the leaders of the public institutions with legal personality and with personal budget that use the budget appropriations that have been allocated to them only for the needs of the units over which they preside.

Therefore, depending on the category in which they belong, the credit accountants have the right to use and distribute the budget credits (the primary and secondary credit accountants) or only to use the budget credits (the tertiary credit accountants). The credit accountants are required to employ and use the budget credits only within the limit of the provisions and according to the approved destinations for the expenditures strictly related to the activity of the concerned entity and compliance with the law.

2. Conceptual dimensions concerning the public institutions

A first way of defining the public institutions is represented by the current legislation (Law no. 500/2002 on public finances), according to which the *public institution* represents the generic name that includes the Parliament, the Presidential Administration, the ministries, and the other bodies of government, other public authorities, autonomous public institutions and institutions from their jurisdiction, irrespective of their funding method. But this is more than a generic name. I believe that for a more wide definition of the public institution concept is required to analyze certain elements of economic nature, which customize this entity and determines its forms, objectives and scope of activity.

From the multitude of elements analyzed, I think the most important are:

- the relation of the public entities with the public budget in terms of their financing;
- the sphere of the public relations of these entities and the reports with the other structures of society;
- the objectives of the activity, namely the general objective of each public entity concerning the satisfaction of the needs of the community, on various aspects of the social structure (education, health, culture, etc.).

Reported also to these elements, the public institution may be defined as being "the administrative entity which, in different fields of society, applies the provisions of national policies in a given period of time, determined, and which carries out certain personal economic and financial-accounting activities, according to the specificity of each". (Popeangă, P., Popeangă, G., 2004, p. 91-92)

I also believe that in defining the public institutions an import role is held by the characteristics of goods produced by them and by how they are being distributed towards beneficiaries. From this point of view, one can say that the public institutions produce public goods that are usually distributed free of charge, following at a maximum level the compliance with the consumer requirements at affordable prices.

According to some specialists, the public institution is in fact "a social invention that allows a more qualified and effective solving of the problem which the state as a whole, takes to resolve" (Nicolescu, O., Zecheru, V., 2003, p.34), an opinion which I share.

Indeed, for achieving the duties and functions that fall into its responsibilities, the state organizes a vast network of institutions in order to provide public services to meet the general interest of the population. Through these public institutions, the state carries out actions in various public areas such as: actions concerning national defense, actions concerning public order and national safety, socio-cultural actions, public development actions, housing and services, economic actions and other actions.

In conclusion, I believe that the public institutions can be defined as patrimonial entities that carry out community service activities; activities that produce no income or insufficient income to cover their own expenses, requiring to allocate from the budget financial and/or material resources to cover these expenses.

3. The typology of the public institutions

By legal status, the public institutions are grouped into:

- *Public institutions with legal personality* are characterized by having their own assets, a current account in the Treasury, their own budget of income and expenditure, they keep their own accounting.
- *Public institutions without legal status* operate as separate entities under the authority of or close to institutions with legal personality.

After hierarchical level, the public institutions are classified into:

- *Superior public institutions*, whose leaders have the quality of primary credit accountants, so they are not subordinated to other institutions. They receive funds directly from the budget and allocate the approved budget credits to the hierarchically inferior institutions.
- *Subordinated public institutions* are subordinated to other institutions whose leaders have secondary or tertiary credit accountants quality. They receive through distribution, from the higher institutions, budget credits needed to cover personal needs.

After the importance of activity, public institutions can be classified as:

- *Public institutions of central subordination*, which include: the Parliament, the Romanian Presidency, the Government, ministries, other public institutions of national interest and all institutions directly under their suborder.

- *Public institutions of local subordination*, which include: communal, county, town councils, the General Council of Bucharest and its subordinate institutions.

After the funding regime, public institutions can be:

- *Public institutions fully financed from the state budget, from the state social insurance budget, from the special funds budget or local budgets, as appropriate;*
- *Public institutions financed from their own revenues and grants from the state budget, from the state social insurance budget, special funds budgets and local budgets, as appropriate;*
- *Public institutions financed fully from their own revenues;*

4. Financing public institutions

The financing of the public institutions is made from the budget (the state budget, the local or social insurance, special funds), from the budget and from its own revenues; from its own revenues or external loans and from reimbursable funds.

In the case of public institutions fully financed from the state, local budget or from special funds, the budget appropriations of these public institutions are determined by the superior credit accountant or together with the Ministry of Public Finances in the case of the primary credit accountants. On the revenue side we see "budget allocations" and on the expenses side, the amounts allocated are broken down by economic criteria of budget classification. If these institutions collect revenues, these will be transferred entirely to the budget from which are being funded. Most public institutions belong to the category of public institutions financed from their own revenues and grants (allowances) from the state, local budget, or from special funds. The subsidies received (which appear in the revenues part) come to complement their own revenues derived from the specific activities developed (sales of tickets, rental facilities, services, etc.). The superior credit accountant determines the amount of the subsidy, but not its destination (material costs, labour costs, etc.). The head of the institution makes the deduction of all incomes (own revenues plus grants) by expenditure category, following that the budget will be approved by the superior accountant. Public institutions can use for developing and expanding their work material and financial means received from legal entities and individuals, by free submission in compliance with the law.

They are being administered according to the rules on public finances and in compliance with the destinations established by the transmitter. Personal revenues of public institutions, financed partly or wholly from their own funds are collected, administered, accounted and used by the public institutions in question, according to the rules on public finances, unless the law provides otherwise. Surpluses from the execution of public institution budgets, financed from special funds, are being regulated at the end of the year with the state budget, with the local budgets or with special funds budgets, as appropriate, in the limit of the amounts received from them, unless the law provides otherwise.

Public institutions funded entirely from their own revenues are similar to the public institutions presented above, except that they do not receive any subsidy from the superior credit accountant. This does not mean that the institution is autonomous (is not subordinated to a superior credit accountant) and its own budget must not be authorized by the superior accountant.

The annual balances from the execution of the public institutions budgets fully financed from their own revenues remain at their disposal and will be used next year for the same purposes. The budgets of the public institutions financed from their own revenues are presented separately as an annex to the centralized budget of the primary credit accountant.

Public institutions financed from external loans or from grants are characterized by the fact that the external reimbursable or non-reimbursable funds from which the public institutions in Romania benefit from, often come to complete allocations from the state budget and the personal revenues of the respective institutions. Payments for the investments of the public institutions are made through the territorial units of the state treasury, based on the investment list, on the technical documentation provided by law, on the funds approved for capital expenditure and under the law on investment and their settlement.

5. The budget of the public institutions

At the base of carrying out revenues and payments made by a public institution lies the income and expenses budget. The budget, in the acceptance of the public finance law represents "the document through which each year are approved the incomes and expenses or, as appropriate, only the expenses, depending on the financing system of the public institutions". Determining the incomes and expenses that

subscribe into the budget is made according to the degree of subordination of the institution in matter, as well as according to its specificity. The income and expenditure budgets of the public institutions are included (fully or in the form of balance) in the state budget or in the local budgets.

5.1. The budget of the public institutions that are fully financed from the state budget

The budget of the public institutions that are fully financed from the state budget, the state social insurance budget, special local budgets or local budgets represent only expenses budgets. Covering the expenditures is made exclusively from allocations from these budgets.

Any income earned by these institutions is revenue from the budget from which the institutions in matter are funded. The incomes can be obtained from the current activity (merger authorization fee charged by the Competition Council) or from occasional incomes (incomes from donations and sponsorships, received as material goods or money funds). The money funds given by individuals or legal entities, in the form of donations or sponsorships, flow directly from the budget that finances them. With these amounts the budgetary credits of the budget in matter are increased, budgetary credits allocated to the public institution. The use of these amounts is made with respecting the destination set by the transmitter.

Monthly, within 10 days before the month expires, the primary credit accountants will send to the Ministry of Public Finances the situation regarding the amounts paid to the budget, in order to introduce the appropriate changes in volume and structure of the state budget, of the state social insurance budget, of the special funds budgets, as appropriate.

The expenditures budget of the public institutions financed from the budget complies with the classification of expenses established by the Ministry of Public Finances.

The budgets of the public institutions financed entirely from the state budget, from the state social insurance budget, from special budgets and from local budgets are approved by their superior credit accountant.

5.2. The budget of the public institutions financed entirely or partially from their own revenues

Public institutions funded entirely or partly from its own revenues comprise an income and expenses budget. On the revenue side are found all incomes, regardless of their origin. Thus, current revenues consist of various categories of fees charged by the institution for the rendered services. The capital incomes include the incomes made from the valorisation of some public institution assets. Subsidies received by the institution take the form of allocations from the state or local budget. Donations and sponsorships are listed separately, also as part of income.

With the financial funds provided by legal entities and individuals in the form of sponsorships and donations their incomes and expenses budget will be increased. These institutions are obliged to present in the annex to the quarterly and annual budgetary execution account the statement regarding the amounts received and used in these conditions and with which the income and expenses budget has been increased.

The material goods received by these public institutions are recorded in their accounting system.

On the expenditure side, a budget corresponding to the total revenues is being founded.

Surpluses from the execution of the budgets of these public institutions are regulated at the end of the year with the budget from which are being funded, within the limit of the amounts received from it.

The budgets of the public institutions partially funded from the state budget, from the state social insurance budget, from special budgets, from local budgets are approved by law, as annexes to the budgets of the primary credit accountants.

5.3. The budget of the activities funded entirely from their own income

The personal revenues of public institutions come from rents, from organizing cultural and sports events, art contests, publications, editorial services, studies, projects, product exploitation from their own activities or annexes, providing services and other similar.

The revenue and expenditure budget for the activities financed entirely from their own incomes are complied with the budget of the public institution belonging to and are approved once with its budget.

The revenues and expenditures of the activities financed entirely from personal revenues are grouped based on the budget classification approved by the Ministry of Public Finances.

In the case of failure to achieve the incomes forecasted in the budget of the activities entirely funded from their own incomes, the expenses will be made within the limit of the incomes achieved.

The annual surpluses gathered from the execution of the revenues and expenditure budgets of the activities financed entirely from their own income are rolled over to next year.

If, at the establishment, under the authority of some primary credit accountants, of some public institutions or of some activities financed entirely from their own revenues, they do not have sufficient funds, based on the documentation thoroughly grounded, the primary credit accountants can grant loans without interest from its own budget, based on convention.

The loans granted will be fully refunded within six months from the date of grant.

The budgets are approved within 15 days after the publication of the annual budget law or the law of rectification in the Official Gazette of Romania, Part I.

The cash execution of public institutions budgets

Public institutions, irrespective of their financing and subordination system, including the activities near public institutions, financed entirely from their own revenues, carry out the incomes and payments operations through the territorial units of the state treasury in whose jurisdiction are located and where they hold revenues, expenditure and availability accounts.

It is forbidden for the public institutions to perform the above operations through commercial banks.

Public institutions are required to forward the approved budget to the territorial unit of the state treasury, according to the current law.

6. Conclusions

Public institutions have an important role in the state because through them, it carries out its functions. Also, economic processes in the market economy, as well as other types of savings are influenced by the state through the public sector. The coverage of public institutions is vast, the acting practically all areas of economic or social. State institutions through which firms through acted dispensed, depending on the policy followed in different periods, the redistribution of GDP in the economy and the positive or negative influence certain activities.

Public institutions have an important role in the state because through them, the state carries out its functions. Also, the economic processes in the market economy, as well as in other types of economy are influenced by the state through the public sector. The coverage of public institutions is vast, the state practically having influence in all areas of economic or social life. The state, through its available institutions or through firms has acted; depending on the policy followed in different periods, over the redistribution of the GDP in the economy and has positively or negatively influenced the development of certain activities.

Establishing public institutions, in order to achieve specific objectives through which certain social requirements are met, derive from the tasks and functions that are in the responsibility of the state. The main characteristic of the public institutions is the fact that they produce public goods that are mainly distributed free or at prices that are found at sublevel costs. Through the services offered by the public institutions it is aimed to provide services to taxpayers that would require high costs if they were to be produced by the private sector, and also aims to ensure the satisfaction of the social needs of the taxpayers.

The most conclusive classification of the public institutions is the one based on their financing system, according to which we distinguish the following types of public institutions: public institutions fully financed from the state budget, from the state social insurance budget, from the special funds budget or local budgets, as appropriate; public institutions financed from their own revenues and grants from the state budget, from the state social insurance budget, special funds budgets and local budgets, as appropriate and public institutions financed fully from their own revenues. The budget of these institutions has also been analyzed from the perspective of the financing system.

7. References

- *Law no. 500/2002 on public finances*, published in the Official Gazette no. 597 from August 13th 2002.
- *Law no. 273 of 2006 on local public finances*.
- Moşteanu, T. *Budget and public treasury*, University Publishing House, Bucharest, 2004.
- Nicolescu, O., Zecheru, V., *The audit of the management in the public institution*, Economical Tribune Publishing, Bucharest, 2003.

- Popeangă, P., Popeangă, G., *The financial and fiscal control*, CECCAR Publishing House, Bucharest, 2004.

THE IMPLEMENTATION OF RISK MANAGEMENT SYSTEMS IN ROMANIAN PUBLIC INSTITUTIONS

BOGHEAN Florin

*Teaching assistant, Faculty of Economic Sciences and Public Administration,
University of Suceava, Suceava, Romania, www.florinb@seap.usv.ro*

HLACIUC Elena

*Ph. D. Professor, Faculty of Economic Sciences and Public Administration,
University of Suceava, Suceava, Romania, www.elenah@seap.usv.ro*

BOGHEAN Carmen

*Teaching assistant, Faculty of Economic Sciences and Public Administration,
University of Suceava, Suceava, Romania, www.carmenb@seap.usv.ro*

Abstract: *The present research focuses on the general outlook on the value of internal auditing activities developed in the organisations included in the sample, as reflected by the responses to the survey questions. Apart from the available research in the field, which is mainly based on quantitative data, the present study uses a wide range of qualitative data in order to detect certain more profound attitudes in the relationship between internal auditing and senior management. The main focus of our endeavour is coherence and accuracy, given the limited value of the thorough knowledge of the relationship between internal auditing and senior management. A major weakness related to the case study research is often quoted as the inability to make inferences from the data collected in the case study to a larger share of the population. Schofield (1990) argues that, instead of issuing a standardised set of results, just as any other researcher studying the matter would, the aim of case study research is to provide a coherent and enlightened description, as well as a perspective, of an issue that is based on and complies with the detailed study of that situation.*

Key words: risk, strategic objectives, internal audit, public institutions.

JEL classification: M 42

1. Establishing and defining the research area

In order to ascertain the practical nature or scientific research, one should first establish the objectives underlying the endeavour, as well as define the connections that have induced the need to approach the subject that will be further analysed. Our argument can begin with the question: *How can one measure the relevance and the novelty of the research topic?* One possible answer could consist in *“the researcher’s talent to observe the professional literature, as well as the entire theoretical and methodological resources available, further adding creative imagination”* (Duşescu, A., 2000). The purpose of the research is to provide pertinent scientific findings that will improve the relationship between the providers and the beneficiaries of the internal audit recommendations.

The most common method of collecting the basic information is the survey. This entails the existence of a questionnaire and a representative sample of the target population, as in the case of the present study. The sampled individuals have been notified directly. In this case, the survey sampling is a distinct stage of the research. This entails the selection of the individuals to be questioned, as well as specifying the sampling frame from which the sample units will be selected in the case of the probability sampling schemes. The representative sample in this particular case consists in civil servants and contract agents. The surveys have been conducted on the premises of the organizations that have agreed to be a part of our research.

Certainly, the conducted research does have certain shortcomings that may suggest that the findings are temporary. Field research also entails the inherent interpretations related to this method. Besides that, the availability of the respondents and of the information may be considered a limitation as well.

Some particular difficulties encountered in our survey must also be mentioned here. The number of the respondents in relation to the initial sample raises certain doubts about the non-response risk. This difference arises when the group of respondents significantly differs from the number of individuals included in the sample. Certain techniques, such as the possibility of meeting the respondents and repeatedly prompting them to respond, could often alleviate such risks. Nevertheless, the lack of

resources and the distance prevented us from carrying out such measures. The non-response risk in our survey could have been of importance if certain categories of organizations had systematically refused to be a part of our enquiry.

The answers we have received after sending this questionnaire via e-mail and through direct notifications have been collected by means of a Statistical Analysis Software that has enabled the effortless collection of the information to be processed and the deduction of the research findings.

The relationship between corporate governance and the social performance of private and public organizations has been increasingly scrutinized in the past few years. Our research has revealed that 50% of the organizations included in the sample have been implementing internal audit as a pillar of corporate governance for at least 2 years. If the internal audit in multinational companies is favoured by the accumulated experience on a group level, the internal audit department has been recently created in public institutions, either from square one or by incorporating the staff and the methodology of the former structures of internal financial control.

2. The presentation of the collected data and the analysis of the empirical research findings

The public institutions included in our research develop internal audit procedures in 80,25% of the cases (50 % co sourcing and 50 % outsourcing internal audit services). However, it is interesting to note that this activity is not yet implemented in 19,75% of these organizations. Therefore, these Romanian local government structures develop a “traditional” internal audit model, whose main objective is to verify the compliance of the procedures, of the methods used to record transactions and the accuracy of the financial statements, mainly focusing on identifying inconsistencies and correcting their effects. This internal audit model focuses on the analysis of the historical data, while the results consist in observations and recommendations. *“A traditional internal audit, focusing on the past, is like driving by looking in the rear-view mirror.”*

The long-term consequences of employing a “traditional”, past-oriented internal audit model in a dynamic economic environment are as follows:

- *It tends to only cover the financial aspects;*
- *Every year, each audit brings in less and less value;*
- *The audited processes become uncompetitive and cumbersome;*
- *Internal auditors are seen and tend to behave as “law enforcers” of the organisation.*

A new vision is currently being considered in Romania as well, i.e. the risk based internal auditing (Coffey, B. S. and J. Wang, 1998). The main difference consists in the fact that the risk-based internal audit is oriented towards the future and thus entails a significantly different approach. If the auditor focuses on the risks, he/she will be able to identify the problems that prove to be more relevant for the management of the organisation. In this respect, the internal auditors will have to broaden their perspectives so as to encompass the strategic aspects of the organisation as well.

The question **“Which of the following activities are organised in your institution (IP)?”** has generated the following findings:

	YES	NO
Are there any internal audit procedures?	75 %	25%
Is there a risk-based internal auditing plan?	50%	50%
Is the information collected and processed?	66,7	33,3%
Is the audit evidence collected?	50%	50%
Is the audit report issued?	100%	-
Are the recommendations taken into account?	100%	-

Instead of tracing back the history of the operations and the observance of the procedures, internal audit will mainly focus on identifying the risks associated with the organisation and on assessing the efficiency of the risk management procedures. The internal auditor will have to answer the following question: *“How well are these risks managed?”* instead of *“Was the wealth properly managed?”* or *“Have the procedures been observed?”*

The recent financial crises have also entailed the need to reform the institutional architecture of public organisations, by enforcing effective standards as well as developing and implementing certain

measures directed at stimulating the development of the public sector, starting from the premise that a strong economy, with solid, open and transparent public institutions could face the challenges arising on a globalised international environment. Thus, a key part in the attempt to improve economic efficiency and develop an attractive environment is *good corporate governance* (M.Ghita & al., 2009).

The information system architecture could be based on one of the following models:

- *The Zachmann model* – which includes the following: *organisation architecture, system structure, technical structure/product technologies*;
- *The TOGAF model (The Open Group Architecture Framework)* – with the following fields: *organisation architecture, data architecture, applications architecture, technical architecture*.

Among the most important benefits of implementing high risk management standards in public organisations, the following are worth mentioning:

- Efficient resource allocation;
- Decreased capital costs;
- Increased public trust, due to the significantly diminished discretionary attitude of the managers and the lowered corruption levels.

On the contrary, inefficient corporate governance affects the proper allocation of the economic capital, hinders investments in administration and decreases the trust of the capital holders. James D. Wolfensohn, former president of the World Bank, once said that *the governance of the corporation is now as important in the world economy as the government of countries* (Cannon, D.M. & al., 2003).

Internal auditors ensure the reliability and relevance of information and internal control for an organisation. In a rapidly changing environment, global competition, new organisational structures and improved information technologies, the measures taken by the government in relation to the present and recent past of organisations are less important than the information and the measures to be enforced in the near and even distant future.

We have tried to find out “**To what extent are organisations interested in the following services provided by internal auditing?**”: (1 = not at all; 2 = to a small extent; 3 = to some extent; 4 = to a great extent; 5 = to a very great extent; 6 = don't know / don't want to answer), and we have arrived at the following:

Nr	Statements	Scale					
		1	2	3	4	5	6
1	Auditing the human resource function	3,6	7,1	14,3	33,9	19,6	21,4
2	Auditing the juridical function	7,8	7,8	17,6	25,5	17,6	23,5
3	Auditing the IT systems	6	14	16	20	24	20
4	Auditing the financial and accounting activities	3,6	5,4	5,4	25	41,1	19,6
5	Auditing the procurement function	3,8	5,7	11,3	22,6	37,7	18,9

The analysis of the above information reveals that, for the target population, the top priority is the financial and accounting activity (41,1%), followed by the auditing of public procurement (37,7%), the auditing of the human resources function of the organisation (33,95) and that the auditing plan of the public institution should not omit the auditing of the juridical function and of the IT systems (with 25,5% and 24% respectively)

In laymen's terms, the focus is shifting from the internal audit function to the threats against strategies. A member of the management of a public organisation may nowadays wonder:

- *Could the changes in the external environment endanger the successful completion of the strategic objectives of my organisation?*
- *Could government assets be stolen?*
- *Do internal processes and reports provide appropriate measures and communicate the threats against the assets, the processes and the successful completion of the strategy?*
- *Are the relations with the external environment in compliance with the effective standards, laws and regulations?*

All these questions are related to possible and very realistic events that may seriously affect a public organisation and are the main focus of risk management. Accountants and auditors are constantly being asked to measure and report the threats faced by organisations. On a process level, more countries now need a management structure or a manager that would organise the internal control activity, including the risk control processes.

The majority agrees that the global risk assessment is more and more important for the success (and even survival) of a public organisation, but the means to this end is a subject that is still being debated. Part of the problem consists in the difficult task of measuring threats or risks.

The second problem is related to the fact that risks can change rapidly and the possible changes must be identified before being measured. Thirdly, the threats cannot be fully assessed, even after a certain period of time, as some of them do not occur while others arise but are prevented or alleviated by control activities.

Larry F. Konrath shows that *risk management* begins with risk assessment, an activity that helps the organisation (the management) estimate the probable consequences of the threats and opportunities (identification, assessment and prioritization of risks), followed by risk management, when decisions are made on how to manage the consequences entailed by this risk. It seems obvious that an internal control framework is the key answer in risk management (Larry F. Konrath, 2002). The first version of the UK Turnbull Report (1999) may be viewed as one of the first public documents of the EU that clearly outlines the relation between internal control and risk management. Lastly, risk communication deals with communicating the results of the two preceding components.

The role of *management* is to enforce the risk and internal control board policies. As part of its responsibilities, the management should identify and assess the risks faced by the public organisation and should design, operate and monitor an adequate internal control system that enforces the policies agreed upon by the board. In other words, management structures should intervene when the identified risks are acceptable in nature; and, if they are not, the management should take measures to respond to those risks. The management also manages the controls and, most importantly, should make efforts to ensure the efficiency of the controls conducted by the internal audit activities, by periodically reviewing the activities (constant monitoring) and by assessing the periodical reports (separate from the monitoring activities) received from each of its departments. This internal audit assurance activity is an essential part of a good control framework. As a consequence of the corruption scandals stirred up in public institutions and as part of the measures taken to improve governance, management structures must demonstrate their ability to fulfil their duties in relation to the internal control system. Therefore, the management not only needs efficient controls but, in order to ensure that these control activities are performed, evidence must be presented to third parties: the governing structures, statutory audit and even the general public (ECIIA, 2005).

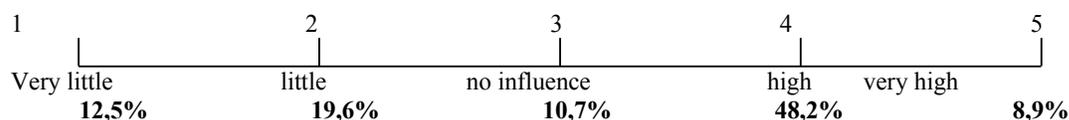
Note that all employees are somehow responsible for internal control, as part of their responsibility for meeting the company's objectives. As a team, they should possess the necessary knowledge, skills and power to establish, operate and monitor the internal control system. This will require them to understand the organisation, its objectives and the risks it faces. In this respect, our research mainly focuses on portraying the image of civil servants and contract agents employed in public institutions, as well as the benefits and disadvantages of implementing internal auditing procedures alongside the other functions performed within public institutions (*1 = not at all; 2 = to a small extent; 3 = to some extent; 4 = to a great extent; 5 = to a very great extent; 6 = don't know/don't want to answer*) and thus we have:

Nr	Statements	Scale					
		1	2	3	4	5	6
A	Internal audit conveys the following advantages/benefits for public institutions						
1	It helps the entity meet its objectives	5,3	8,8	17,5	43,9	10,5	14
2	It organizes and ensures the efficient performance of the internal control system	5,4	3,6	19,6	41,1	16,1	14,3
3	It supports the proper development of external auditing	3,8	1,9	15,1	39,6	17	22,6
4	It helps improve the efficiency and effectiveness of risk management	5,5	5,5	18,2	32,7	20	18,2
5	It helps diminish the costs of external auditing	10	10	2	38	16	24
6	It provides recommendations that convey value by improving the audited activities	5,6	5,6	18,5	31,5	22,2	16,7
7	Follows up the results after management structures implement the recommendations of internal audit	5,8	3,8	7,7	40,4	25	17,3

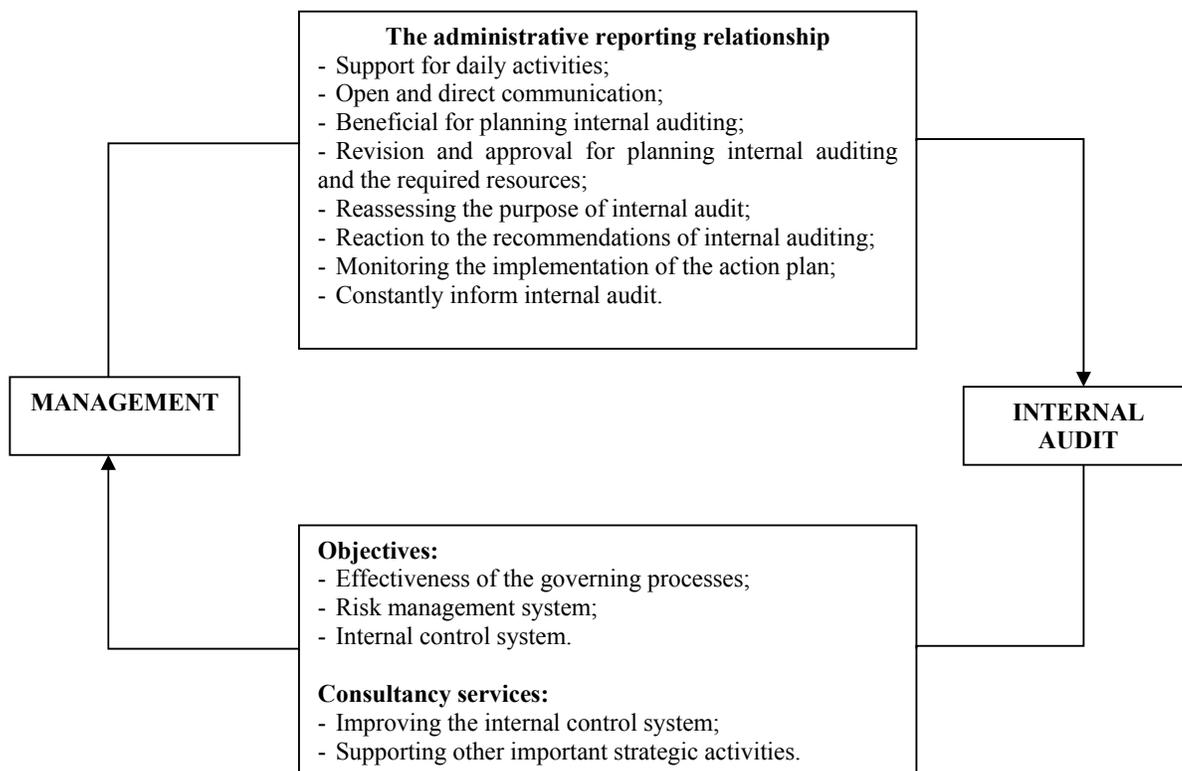
8	Develops the quality assurance techniques	5,5	1,8	20	40	12,7	20
9	Constantly improves the competencies and professional experience	7,1	3,6	10,7	39,3	23,2	16,1
B. Internal audit generates the following disadvantages in public institutions							
1	High costs related to the internal audit function itself	10,7	21,4	21,4	12,5	10,7	23,2
2	Internal audit may create tension and discontent in the organisation's management structures	12,2	25,5	14,5	20	7,3	20
3	Internal audit may create tension and discontent among the organisation's employees	13	20,4	18,5	16,7	11,1	20,4
4	Internal audit does not perform the role of risk prevention and combating	17,3	19,2	9,6	11,5	15,4	26,9
5	Evidence of fraud or errors within the organisation may not be detected in time	17	20,8	17	5,7	15,1	24,5

Even before the recent changes that have affected the corporate governance procedures, a large number of sampled individuals have acknowledged the great challenge faced by internal audit in managing the agenda of corporate governance, a function that may enable them to directly support the requirements and responsibilities of senior management in this respect. Another study argues that internal auditors generally regard the leanings of corporate governance as benefitting their cause – such as, for instance, the first Turnbull Report of the UK (1999) – and have reported that the managers of public institutions allege that these leanings have helped them change their attitude towards internal audit in a positive way and, thus, departments have frequently asked for the advice of internal audit when they had to enforce new procedures (Spira, L. F. & Page, M., 2003). Moreover, Goodwin-Stewart and Kent have found evidence that organisations possessing an integrated framework of risk management are more likely to use internal audit. Apart from this, their study confirms the fact that internal audit is parallel to other risk management mechanisms such as an appointed risk manager (Goodwin-Stewart, J. & Kent, P., 2006).

The question we have asked in our study, “**On a scale of 1 to 5, how do you rank the influence of internal audit in planning the development strategies of a public institution?**”, has generated the following results:



Apart from its significant role of insurance and consultancy in risk management, internal control and corporate governance, internal audit may also support management structures in terms of revising operational efficiency, investigating the results of financial initiatives, as well as providing knowledge related to economic activities. Moreover, internal audit is sometimes required to work alongside management in various other activities (ad-hoc) of the organisation, such as, for instance, public procurement and the implementation of various legal provisions.

Figure 1: Relationship between internal audit and senior management

Source: Gerrit Sarens and Ignace De Beelde, International Journal of Auditing, 2006

Due to an often strong and either direct or indirect relationship between internal audit and the managers of public organisations, as has been pointed out above, one might expect the latter to be in a position to significantly influence internal audit.

3. How to assemble the team of auditors?

A public institution makes use of several options to assemble the team of the internal audit department and we may often distinguish a mixture of such methods:

- *Reorientation of the staff previously employed in the internal financial control department or in similar positions* – in this case, the main challenge consists in adjusting their mentality to the new role;
- *Employing new personnel without any previous experience and training them through various development programmes* – entailing higher costs and stretching over an extended period of time;
- *Hiring new personnel with a great deal of experience in internal or financial auditing* – a viable method that may entail higher salary costs.

4. Conclusions

Senior managers may wish to provide assurance about the objectives and consultancy on risks and control. An internal audit function that has been allocated the appropriate resources can provide such assurance and consultancy.

The internal audit function would supplement the management of the activities on a high level, by providing independent and objective assurance measures directed at the efficiency of the organisation's governing processes, at the effectiveness of the management of all types of risks and determine whether the internal control processes are, indeed, operative in managing risks at a level that is considered acceptable.

When analysing the expectations of senior management and of the audit committee, it becomes clear that internal audit is expected to compensate for the lack of control that may be triggered by the increased complexity of the organisation. The development of the internal audit function or of the collaboration with other professionals (for instance, inspectors) does not seem like a useless and costly endeavour. Given the contacts internal auditors establish with other professionals in the field, the management would want to make sure that internal audit maintains the corporate tradition. Moreover, internal auditors are expected to entertain an active collaboration with external auditors in order to ensure the coverage of the entire auditing needs.

We may conclude that the acceptance and encouragement of internal audit structures within public institutions highly depends on the support they may receive from their managers in the form of the benefits they will convey by planning internal auditing, in solving the ad-hoc issues that arise throughout the year, in following up the internal audit findings and in the support they will receive for expanding the internal audit function. It has become quite clear that internal auditors are actively seeking the support of the management structures and combine it with their own efforts to promote the internal audit function within the public organisation, by taking into account the maturity of this function. Moreover, the closer inspection of corporate governance and the occurrence of fraud in public institutions has emphasized and acknowledged the role played by internal audit.

5. References

- Cannon, D.M., Godwin, J.H., Goldberg, St.R. (2008), *Risk management and governance*, *The Journals of Corporate Accounting & Finance*, Volume 20 Issue 1, November/December 2008, pp. 1-99.
- Coffey, B. S. and J. Wang: (1998), *Board Diversity and Managerial Control as Predictors of Corporate Social Performance*, *Journal of Business Ethics* 17, 1593–1603.
- *European Confederation of Institutes of Internal Auditing*, Position Paper: Internal Auditing in Europe, 2005.
- Ghita M., Ct. Iațco, C. O.Brezuleanu, M. Vorniceanu (2009), *Guvernanța corporativă și auditul intern*, Editura Tipo Moldova, Iași.
- Goodwin-Stewart, J. & Kent, P. (2006), „*The use of internal audit by Australian companies*”, *Managerial Auditing Journal*, Vol. 21, No. 1, pp. 81–101.
- Larry F. Konrath (2002), *Auditing a risk analysis approach*, South Western – Thomson Learning, Mason, Ohio.
- Spira, L. F. & Page, M. (2003), „*Risk management: the reinvention of internal control and the changing role of internal audit*”, *Accounting, Auditing & Accountability Journal*, Vol. 16, No. 4, pp. 640–61.

ACCOUNTING AND AUDIT IN TIMES OF CRISIS

BOIA Mădălina-Ioana

Ph. D. Student, Faculty of Accounting and Management Information Systems - Institute for Doctoral Studies, Academy of Economic Studies, Bucharest, Romania, madalina_boia@yahoo.com

Abstract: *The aim of the paper is to provide an overview of the impact of the global crisis on accounting activity and audit field. Concerning the interdependence of national economies, in the context of globalization, is increasingly appreciated the importance of financial statements for decision making. Poor accounting practices and improper audit, bad reporting, inadequate corporate governance and market-to-market accounting are some of the supposed factors that caused the economic decline and are going to be discussed in the content of this paper in order to identify their contribution to the global crisis and some ways to improve.*

Key words: globalization, crisis, accounting, audit, IFRS

JEL classification: M 42, M 41

1. Introduction

Current economic world is into a continuous process of modelling that aims to improve the market systems. In the context of globalization, the interdependence between states is increasing, thing that determine a continuous adjustment of national economies in order to create a space characterized by safety and transparency.

The development periods alternate with the decline ones and, therefore, periods of crisis with different intensity and length may occur and cause resizing and reorganization. Such a period is represented by the crisis we are facing today. As a result of improper practices and scandals that have shaken the confidence in the safety of business, the world focused, among others, on the management structures of companies, supervising activities, risk management and accounting and tax practices. Ways to improve these areas were sought. Regarding the accounting field, International Financial Reporting Standards (IFRS) adoption becomes a necessity in order to ensure comparability and transparency. As an assistance tool, accounting has to guide the users of financial statements to make the best decision. A single set of standards is expected to provide comparable and high quality information in order to facilitate the decision making process. IFRS used widely could encourage abroad expansion and could increase the confidence of foreign investors.

Concerning the audit activity widening the range of risks analyzed and providing a better communication and high quality opinion can lead the increase in the importance of audit. Later scandals linked to misleading audit practices have weakened the confidence in the audit activity so, a reinforcement of this activity is necessary.

2. Globalization

Contemporary world economy goes through a transformation process and, as a result of trade relationships multiplication, technological process and due to the occurrence and dynamic of political and economic decisions that tend to surpass competences of national states, the process of globalization represented the development of the economy, at a global level. As multinational companies and global activities gradually replace independent national economies, globalization, as an inevitable and irreversible process, involves diminishing importance of borders and rising economic interdependence of countries by increasing the transaction volume and the variety of goods and services across borders.

The trend of globalization has increased in the late twentieth century with the desire to promote unitary states and encouraged economic expansion by creating relationships between states.

Due to globalization of business, in most cases, large business owners are becoming increasingly distanced from the act of managing their own business. The most frequent solution is to delegate responsibilities of government to specialized persons able to meet investors expectations, willing to implement their own arsenal of knowledge, skills and personal abilities. So, in order to remove obstacles faced by entities, concerns arose for strengthening control over management organizations and assistance mechanisms. A set of relationships between management, the Board of Directors, shareholders and other stakeholders has outlined as corporate governance.

At the center of economic globalization is the global financial system, therefore the focus will be on financial institutions. In the context of global markets and foreign competition price, quality and customer satisfaction are some of the most enhanced matters for the new competitive landscape.

Regarding the accounting field, globalization raises the question of International Financial Reporting Standards (IFRS) implementation: standardization, harmonization, convergence. Multinational companies tried to penetrate various international markets to invest but encountered difficulties because of financial statements prepared according to different accounting referential. In the absence of a universally accepted set of standards, companies have high costs of reprocessing and preparation of consolidated financial statements.

It is noticeable an increased need for regulation of commercial activities, accounting procedures and methods. Also is increasingly appreciated the importance of financial statements for decision making.

In recent years, preparation of financial statements also require more experience, new knowledge and skills to meet the growing demands of users of accounting information.

3. The Global Economic Crisis- causes, effects

Considering the increasing interdependence of national economies, in the context of globalization, the adverse effects of destabilization of economic environments are felt more strongly from one country to another.

History has shown that the predictability of these moments of crisis is low but they are closely related to cyclical economic processes. Crises usually occur when an increase is followed by a decline in economic efficiency and this affects our standard of living. A crisis period is characterized by a strong instability involving a permanent state of insecurity and distrust as regards the financial system materialized in the disorder of market mechanisms.

A clear classification of a crisis in a particular model is impossible to be done just because each crisis is generated by a particular set of specific factors, in a given situation.

Overtime, mankind has experienced such periods: Great Depression of 1929, the Mexican crisis of 1994, Asian financial crisis (1997 – 1998).

Today world is facing a strong crisis that affects all areas of activity and reveals various defects or system errors that caused imbalances at macroeconomic levels. All attention was focused on complicated financial systems that lead to a disaster which continues to produce its effects. Due to globalization, innovation, advanced technologies, as well as profession development and introducing new and different financial instruments, crisis increased in intensity.

Although there have been numerous statements of economics and policy analysts who predicted a tough recession and although other less intense crisis affected economies during 2000 and 2007, the previous problems did not result in a more serious approach of financial systems malfunctions.

3.1. Causes

The causes of the new global crisis are many, among them are well known the problems concerning loans for assets, bad reporting, misleading accounting practice, asset valuation, defective banking system. For some, the spectacular growth followed by a sharp stock market drop was not seen as the result of an economic disaster, but a massive manipulation of business leaders behaviour, investment banking, analysts and all professionals involved who assumed responsibility for maintaining the honesty of the market but chose to satisfy their personal interests.

Famous scandals that marked the early 21st century, Enron in 2001, followed by WorldCom, Nortel, Parmalat in 2002 brought to attention poor accounting practices and improper audit.

Uncontrolled growth of assets prices, an excessive appetite for profit which fueled an increased demand for high-risk assets, inadequate corporate governance and inappropriate managerial incentives in financial institutions are some of the factors that generated the pronounced character of the global economic downturn. In terms of accounting practices is considered that the fair value model, also known as market-to-market accounting, is one of the crisis factors.

Concerning the audit field, people have lost confidence. Although lately the audit activity gained an important role, because of its usefulness for decision making, deficiencies in risk management systems, doubtful outsource audit and the collapse of some important companies that benefited from favourable audit opinions, made people uncertain regarding compliance and transparency.

3.2. Effects

The crisis has caused the failure of banks and credit institutions, impossible recovery of debts, especially in real estate and the decrease of stock prices was reflected in the stock exchange suspended trading for many leading companies.

Production recorded a decline that generated the global slowdown. The emerging economies in process of economic and financial structuring, vulnerable, have been severely affected because they had a weak capacity to counteract the crisis. However, the main disadvantage of these economies can be a great advantage in the context of the global economic recovery. Because the economic and financial structure are not well defined, with strong mechanisms, these economies are able to recover more easily than the stronger ones which are less flexible and adaptable to economic, political and social conditions, political and social in times of crisis. Nevertheless in its entirety, the economic environment still faces a global economic slowdown.

Attempts were made in order to identify the causes, the responsible persons and/or structures. Various causes were brought to attentions so different fields were carefully analyzed and possible pathways were discovered.

4. Accounting, audit, corporate governance

Over time, the entities had to adapt in order to meet the dynamic needs by developing the accounting practices and the audit activity, which first focused on accounting problems and later began to be used as a tool to detect risk. Thus, the audit activity evolves gradually providing solutions to preserve the integrity of heritage.

Accounting represents an assistance tool to meet the demands of the users of financial information. Internal audit appears during the economic crisis from 1929 in USA when companies seriously affected by the economic recession were trying to reduce costs. So it was necessary to carefully analyze the accounts and this was for the care of external audit firms which testified the financial statements. And although it was first perceived only as "financial audit", later the audit activity develops as "internal audit", having as motivation leadership responsibility on the reality, accuracy and legality of information contained in financial statements and the existence of an entity's own audit in order to eliminate or reduce irregularities.

A relatively new field of scientific management, whose appearance and development has been influenced by the globalization process, corporate governance, takes more space for debate in today's business world. In times of crisis new ways to improve corporate governance have been identified. Corporate failures in the United States and United Kingdom have highlighted the vital importance of corporate governance in terms of responsibility and performance. A system of corporate governance is beneficial to build a certain degree of confidence and to stimulate guiding and control in order to maximize profit and organizations value.

4.1. Accounting problems and recommendations

Accounting firms were at the center of the last financial crisis and now, the new global crisis led to increased need for convergence of accounting and improved accounting practices.

Major financial scandals have shown weakness of accounting information provided and their negative effect reflected in the performance of the market.

G20 also known as "Group of Twenty" is the Group of Twenty Finance Ministers and Central Bank Governors and brings together finance ministers and central bank governors from 20 major economies (19 countries plus the European Union). Concerning the global crisis and the fact that the emergence and development of financial markets brought to discussion problems related to a true and fair representation in the financial statements, G20 propose a review of fiscal policies.

As a need to increase comparability, transparency and also in order to provide useful information, G20 requested aggregate efforts of authorized institutions and organizations to achieve a single set of high quality accounting standards- International Financial Accounting Standards (IFRS).

The use of a single set of standard leads to diminishing differences in reporting and increase the credibility of financial statements. Also by removing discrepancies between national regulations and IFRS the costs of reprocessing can be eliminated.

Accounting convergence is expected to bring up an accounting system based on comparability and transparency for an easier decision making process and a better allocation of resources.

4.1.1. International Financial Reporting Standards (IFRS)

As a principle based set of standards, used in many countries in order to reflect true and fair value of the business, International Financial Reporting Standards (IFRS) are supposed to ensure the quality of financial statements and provide a modern and well organized business environment.

Differences between accounting standards, underdeveloped markets, the tax system and the link between accounting and taxation may cause difficulties in achieving accounting convergence because satisfying markets information needs may differ, sometimes significantly, from those of tax authorities.

Also some obstacles in IFRS implementing may occur from language and terminology difficulties as different or inappropriate interpretations of the specifications may lead to a distorted and defective reporting.

Complex national standards make it harder for the authorities to implement the IFRS rules as countries with tradition in accounting need a longer period to make the transition and to adapt to new requirements.

Effects of IFRS implementation can be seen in the quality of reporting. Using an uniform reporting system can ensure the premises for accurate and complete information, increase comparability and transparency. A common set of standards presents the advantages of reducing the asymmetry of the information that underlies investors decision. The users of the information have the possibility to make a better comparison over time and space of the performance of companies. IFRS offers the prospect of lower risk for investors and contribute to attraction of foreign investors by providing the right information needed for good decision.

By normalizing is ensured a framework with objectives as unitary information, a better use of economic and financial information, easy decision make.

IFRS global expansion is achieved through convergence or adoption. While convergence means alignment of national reference to the IFRS rules by a gradual change of national accounting regulations in the sense of proximity to IFRS, adoption involves a renunciation of national rules and replacing with the IFRS ones.

More and more countries prefer to adopt IFRS, even if, some of them must make some market mechanisms adjustments.

In the table below it can be seen that states all around the world make efforts in order to align to IFRS:

Table 1: IFRS in different countries

Country	Financial Reporting framework
China	In 2006 officials have announced that companies will adopt International Financial Reporting Standards. The new rules will apply to listed companies beginning January 1, 2007. The new system was expected to embrace the principles of "fair value accounting".
Canada	January 1, 2011 is the expected changeover date at which, for all public accountable enterprises, International Financial Reporting Standards will replace Canadian GAAP
Brazil	Listed companies must publish their consolidated financial statements according to International Financial Reporting Standards starting with reporting periods ending in 2010.
Turkey	All companies listed on the Istanbul Stock Exchange are required to follow International Financial Reporting Standards
Romania	Romanian companies listed in an European Union securities market follow International Financial Reporting Standards since 2005
Morocco	All financial institutions must use IFRS for the accounting periods starting 1 January 2008
Nigeria	The Nigerian Federal Executive Council approved 1 January 2012 as the effective date for convergence of accounting standards with IFRS.
Ecuador	Starting 1 January 2012 all companies must use IFRS
Germany	Adoption of IFRS in June 2005
Lichtenstein	Adoption of IFRS in June 2005
Fiji	On the list of the categories of entity that must apply IFRS are, among others: public companies, banking and financial institutions, insurance entities, government majority owned companies

Source: <http://www.iasplus.com/en/jurisdictions>

4.1.2. The Fair Value Model

One of the issues at stake related to accounting practices is the use of fair value model. This replaces the historical cost

Although some believe that it represents a threat to accounting practices, the fair value accounting is considered to be the best way for investors informing and economic reality reflection by approaching the market values. It reflects the neutrality of the reported information and increases performance comparability.

Concerning the corporate governance problems, the true and fair value model can reduce the possibility of adjusting the results by managers.

The measurement of assets and liabilities is very important and many consider that using the fair value model financial statements reflect, at each moment, current market conditions. On the other side, opponents of this model blame it because market value enhances investor confidence but, particularly in times of price changing, it makes the financial system more vulnerable. The fair value concept is used in IFRS and U.S. Financial Accounting standards, and the fact that it was widely accepted aroused suspicion about the accuracy and usefulness of financial reports prepared according to these standards.

The model of fair value was considered to be a threat for the interest of the company owners because it gives managers too much freedom and the risk of earning manipulation becomes bigger.

Although at the beginning the International Accounting Board didn't pay attentions to the criticism of this model eventually it proposed some ways to improve fair value models (IFRS 7 Financial Instruments Disclosure). In U.S. a study was performed in order to determine the impact of fair value model and recommendations were made in order to improve the model.

In the context of the global crisis, regarding the fair value model, assumptions were made about the negative effect of fair value over the IFRS implementation process and because IFRS recognize it as valid, IFRS have been criticized.

4.2. Audit and corporate governance

As a result of the increasing complexity of the audit activity and its involvement in additional activities such as tax consulting, a problem of interest conflict appears. The auditor's role in assessing the risk of distortion of financial statements becomes more important as lately is well known the fact that shareholders insufficiently exercise their role because of poor control mechanisms. This due to the fact that corporate governance issues and its importance were brought to discussion only for listed entities. Concerning the corporate governance, clear and transparent structures are necessary in order to ensure the best way possible the owner's interest. Also a better communication with the owner is required in order to provide more accurate information.

5. Conclusions

Scandals in recent years and bankruptcies of leading companies caused the economic collapse which takes effects today. As a result of several factors, confidence in the financial and management systems has decreased. Attempts were made in order to identify the causes and the responsible persons for the current economic situation. This revealed weaknesses and errors of different systems but also proposed different ways for correcting and improving.

Regarding the audit and accounting fields, principal pathways are: review of accounting practices, IFRS implementation, better corporate government models, better communication between audit and management, a wider range of risks concerning the audit activity.

IFRS implementation, although involves market mechanisms adjustments, becomes more necessary. Increasing interdependence between states seek to ensure a stable economic environment for transactions performed in conditions of transparency. A common set of standards is, therefore, necessary and gives investors confidence just because it requires transparency and comparability. Implementation of IFRS, through harmonization or adoption, implies changes that can cause problems and discussions about the usefulness or disadvantages but a unitary reporting has many advantages and involves accounting progress, developing of accounting profession, better allocation of resources.

The importance of audit is expected to increase just because identifying risks and combating them can prevent crisis periods by ensuring a safer business environment and a better knowledge of improving possibilities.

6. References

- Arens A., Loebbecke J.K.(2003) *Audit. An integrated approach*, ARC Publishing
- Bezemer, Dirk J (2009): *“No One Saw This Coming”*: *Understanding Financial Crisis Through Accounting Model*
- Cenusa C., Feleaga N. (2011) *Evoutions in financial reporting in the global economic crisis context*
- Even S., Feldman N. (2011) *Implications of the Global Economic Crisis*
- Kugler C. (2001) *Corporate governance and economic performance*, European Corporate Governance Institute, Oxford University Press
- Morariu A., Sucuiu Gh., Stoian F. (2008) *Internal Audit and Corporate Governance*, University Press
- Robert J. Shiller, (2004) *The New Financial Order: Risk in the 21st century*, Princetown University Press
- Rajini M., Palmond C. (2012) *Effect of global financial crisis on accounting convergence*, Working paper
- Simha R. –*Critical National Need: A computational Infrastructure for 21st Century Accounting*, Working paper
- Stoian A., Țurlea E. (2001) *Financial and accounting audit*, Economic Publishing
- The Global Crisis (2010) *Causes, Implications, solutions*, International Labour Office, Geneva
- www.iasplus.com

A FAN CHART FOR INFLATION RATE FORECASTS IN ROMANIA

BRATU Mihaela

Ph. D. Student, Faculty of Cybernetics, Statistics and Economic Informatics /Department of Statistics and Econometrics, Academy of Economic Studies, Bucharest, Romania, mihaela_mb1@yahoo.com

Abstract: *For an inflation targeting Central Bank, like The National Bank of Romania, the transparency of the target regime and the credibility of the politics based on it are very important objectives. Moreover, the forecasts offered to the public are a mirror of the professionalism in anticipating the macroeconomic evolution. These goals are very well accomplished by the inflation fan charts, an important instrument used to reflect the uncertainty in predicting a phenomenon. This uncertainty is amplified in crises periods. Therefore it is strongly recommended the use of an objective mean that reflects the uncertainty in the economic evolution. In contrast to the simple BNR methodology, based on an aggregate indicator of error type, the fan chart facilitates the establishment of monetary policy, taking into account the probabilities that the rate of inflation fall in some specific intervals in each period of the forecast horizon. In this paper, I built a fan chart for the inflation rate in Romania on forecasting horizon 2011 Q1-2013 Q4, noticing a tendency of decrease for inflation over the mentioned period.*

Keywords: fan chart, BoE methodology, two piece normal density, degree of uncertainty, balance of risk

JEL classification: P 24

1. Introduction

The evaluation of forecasts uncertainty for key macroeconomic indicators is important for many types of economic agents, particularly for central banks. However, only later the methodology for evaluating this uncertainty began to develop due to inflation targeting by national banks. Global output (GDP), inflation and interest rate are variables for which the forecasts uncertainty is most evaluated. Since 1996, the Bank of England presented the inflation forecast as a probability distribution called "fan chart."

2. Literature review

An introduction to forecasts uncertainty in macroeconomic modeling is realized by Ericsson N. (2001), which establishes the definition of forecast uncertainty, the main measures of evaluation and its consequences. Ericsson N. (2001) shows that although the literature uses the expression "forecast uncertainty", the correct one is "the uncertainty of forecasting errors", because certain values for a future phenomenon they are given, but what we do not know is the error associated with predictions. Ericsson N. (2001) defines uncertainty as the variance different results registered for certain indicators in relation to predicted values. In other words, the uncertainty reflects the difference between the actual recorded values and the projected ones.

Vega M. (2003) shows that only relatively recently, in the last 10 years, the literature in forecasts domain has begun to pay particular attention to density forecasts. Given the asymmetry of risk, it was considered necessary the pass from point forecasts to a complete representation of the probability distribution.

A. Novo and M. Pinheiro (2003) point out that a first measurement of uncertainty was achieved by the Bank of England in 1996 by publishing estimates for the probability distribution of expected values for inflation and GDP. After Bank of England initiative, many central banks represent the density forecast using a graphic called „ width charts” or "fan chart". Basically, fan chart graphic shows the probability distribution of the forecasted variable or many prediction intervals determined for different probabilities. Descriptions of statistical methods used by the Bank of England (BoE- Bank of England) and Sweden to build fan charts are made by Britton, Fisher and Whitley (1998) and Blix and Sellin (1998).

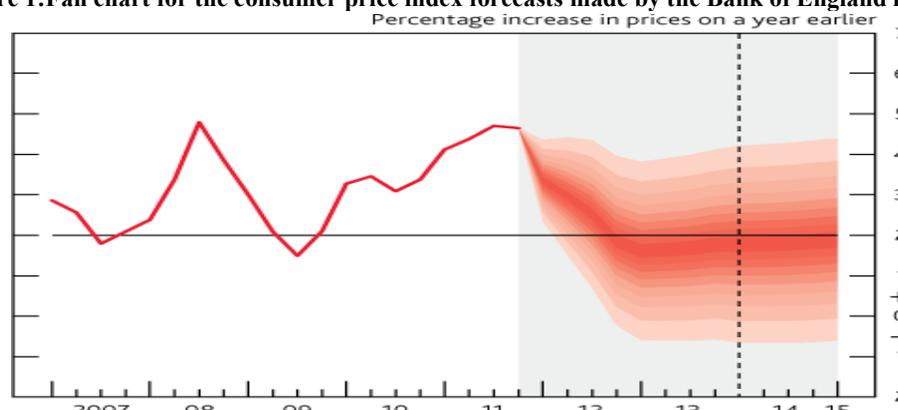
For a future moment from the forecast horizon, the measure of probability for density function for the different results is represented by the depth of the shadow. The darkest portion of the band covers about 10% of probability, including the central projection. In time the uncertainty increases and the band widens. Each successive pair of bands must cover about 10% of probability, in aggregate not exceeding 90% of probability.

For building densities some parametric methods are used, the measure of risk or uncertainty being given by the value of the density forecast parameters. The problem of measuring risk and uncertainty was most approached in the context of inflation targeted by central banks. In this case, the risk is associated with the probability that forecasted inflation be higher or lower than three reference measures: core forecast, targeted inflation, targeted inflation approximations.

Since the introduction of fan charts in 1996 in inflation report by the Bank of England, these was studied by many authors. Wallis and Hatch made detailed researches about fan chart and the Bank of England forecasts.

Although the methodologies proposed by Britton, Fisher and Whitley (1998) and Blix and Sellin (1998, 2000) are the best known, Cogley, Morozov and Sargent (2003) used the minimum entropy method to obtain essential information in predicting inflation and they compared densities forecasts with the fan charts made by the Bank of England. Cogley, Morozov and Sargent (2003) started from the forecast densities generated using a BVAR model with stochastic variances and coefficients of deviation. Then, these densities are modified by introducing additional information obtained using a relative entropy method proposed by Robertson, Tallman and Whiteman (2002).

Figure 1: Fan chart for the consumer price index forecasts made by the Bank of England in 2012



Source: Bank of England <http://www.bankofengland.co.uk/publications/inflationreport/irfanchn.htm>

Note: Targeted inflation is defined by the Bank of England as RPIX inflation (Retail Prices Index)

Garratt A., Lee K., Pesaran M.H. and Shin Y. (2000) calculated, using a small macroeconomic model, the densities forecast for England's inflation and output.

The method used to build a fan chart developed by the Bank of Sweden, Riskbank, and described by Blix and Sellin (1998) is based on a non-diagonal covariance matrix. Between conditioning variables appear linear correlations which do not influence the asymmetry of predicted variables distributions. Later Blix and Sellin (2000) for small dimensions consider the case when the correlation influence the asymmetry. A. Novo and M. Pinheiro (2003) made two key changes in the assumptions of BoE methodology, showing two deficiencies: linear combination of modal values of input variables is a poor approximation of forecast errors mode, when the initial distribution is asymmetrical and the hypothesis of independence of errors is too restrictive.

Wallis KF (2004) evaluated the density for the forecasts of the Bank of England, as well as for those of the National Institute of Economic and Social Research. The author concludes that for both institutions the forecasts central tendency is biased and forecasts density overestimates their uncertainty.

Wallis (2003,2004) and Clements concluded that if a forecast horizon is has only a year the probability of high rate of inflation is overestimated. Elder, Kapetanios, Taylor and Yates (2005) show that this probability is overestimated for GDP even for horizon smaller than a year. Furthermore, from their research resulted an overestimation of the variance of forecasted GDP. Dowd (2007) and then Gneiting and Ranjan (2008) observed an overestimation of uncertainty. Gneiting, Balabdaoui and Raftery (2007) study the probabilistic calibration property. Although the Bank of England did not take into account the resolution analysis, Mitchell and Wallis consider it very important. Dowd (2008) analyzed the fan charts built for GDP and concluded that for a short forecast horizon the risk is less captured. Since 2008, the European Central Bank represents its inflation using fan charts. Osterholm P. (2008) built a VAR model for the Swedish economy, parameters estimation being based on Bayesian technique in order

to formalize the prediction uncertainty. The major advantage of Bayesian approach is given by the fact that the posterior forecast density interpretation is equivalent to that of a fan chart.

Julio J.M. (2009) proposed the use of Highest Probability Density, HPD, bands and the author included the flexibility in order to measure the risks related to data revision. HPD bands are narrower and its central band centers include the mode of the forecasting distribution.

Galbraith JW and van Norden S. (2011) evaluated the forecasts probabilities using the densities published by the Bank of England and they made their graphical representation, measuring how much they exceeded a threshold. The authors evaluated their resolution and calibration, showing the relative performance of forecasts using also the low resolution for output (GDP) predictions.

Important contributions in the literature related to the fan charts are brought in the demography by King (2004), who builds these graphics for longevity, Scherbov Sanderson (2004), who use fan charts to represent the life expectancy. Beyond the frame of inflation evaluation, fan charts are used to describe the probability density for future survival rates for men in a study made by Blake, Cairns and Dowd (2008).

3. The Bank of England(BoE) approach for fan charts

For variables that must be forecasted, variables called "input variables" we determine the probability distribution, which will be aggregated. Two types of errors are measured, errors which Novo and Pinheiro M. A. (2003) classify as:

- Errors of conditioning variables (rate of inflation, interest rate, consumption etc.).
- Pure errors occurring in variables (they are calculated eliminating the first category of errors from the all measured errors).

The assumptions on which the BoE approach is based are, according to Britton, Fisher and Whitley (1998):

- The representation of error prediction as a linear combination of the variables to forecast;
- Input variables are independent;
- Marginal probability distributions of input variables consist in two parts normally distributed, aspect described in literature by the expression „ two-piece normal distribution “(tpn) or split normal distribution, according to John (1982);
- tpn distribution has three parameters: mode (μ) and two standard deviations, to the right and left (σ_1 și σ_2).

Since inflation rates are not symmetrically distributed around the most probable value, Britton E., P. Fisher and J. Whitley (1998) justify the need of split normal distribution (tpn), which shows that the prediction error actions only in one way.

N. Banerjee and A. Das (2011) show that in order to build the forecast distributions the specification of 3 parameters is necessary: a measure of central tendency, an estimate of degree of uncertainty, a presentation of the balance of risk.

a) choosing an appropriate measure of central tendency

The modal value is often chosen, because it is the most likely value to maximize the probability density. However, the mode uses only a part of the information contained in the database and it does not have the average asymptotic significance, fact that generates problems in achieving the inference when the sample distribution is not known. When there are multiple modal values, only one of these will be chosen, which limits the efficiency in using the mode.

b) N. Banerjee and A. Das (2011) recommended the use of dispersion to quantify the degree of uncertainty (how different the forecasted values are from the central value) at the expense of average absolute error or interquartile deviation.

c) The risk can be symmetrically distributed around the central tendency or it can be unbalanced, when the mode and the average differ.

In the following we will analyze the *methodology proposed by the BoE* and described also by Novo A. and Pinheiro M. (2003), following two directions: the linear combinations and the tpn aggregation.

A. Linear combinations from BoE approach

If y is the variable for which the forecast is realized, then the forecasting horizon (H), the forecast value will be denoted with y_{t+H} . The vectors of $(1 \times K)$ dimension for different paths of the conditioning variables are: x_{t+h} , $h=1,2,\dots,H$. Central forecast for 0 version is: $\hat{y}(x_{t+1}^0, x_{t+2}^0, \dots, x_{t+H}^0)$. This prediction

results from a variety of econometric models. A local linear approximation is influenced by changes in conditioning variables:

$\tilde{y}(x_{t+H}^1, \dots, x_{t+1}^1) = \hat{y}(x_{t+H}^0, \dots, x_{t+1}^0) + \beta'_0(x_{t+H}^1 - x_{t+H}^0) + \beta'_1(x_{t+H-1}^1 - x_{t+H-1}^0) + \dots + \beta'_{H-1}(x_{t+1}^1 - x_{t+1}^0)$ where $\{x_{t+1}^1, x_{t+2}^1, \dots, x_{t+H}^1\}$ is an alternative to conditional variances. The estimated effects of y_{t+h} to the change of different factors included in x_{t+h-i} are called interim multipliers denoted with

$\beta_i, i = 0, \dots, H - 1$. The pure forecast error is $\varepsilon_{t+H} = y_{t+H} - \tilde{y}(x_{t+H}, x_{t+H-1}, \dots, x_{t+1})$. This error, according to Novo and Pinheiro M. A. (2003) aggregates the following components:

- o Estimated Errors interim multipliers;
- o Errors generated by the approximation of a nonlinear model with a linear one;
- o Errors of misspecification;
- o Economic shocks in forecasting horizon.

Taking into account the first relation, the total forecast error is:

$$e_{t+H} = y_{t+H} - \hat{y}(x_{t+H}, x_{t+H-1}, \dots, x_{t+1}) = \beta'_0(x_{t+H}^1 - x_{t+H}^0) + \beta'_1(x_{t+H-1}^1 - x_{t+H-1}^0) + \dots + \beta'_{H-1}(x_{t+1}^1 - x_{t+1}^0) + \varepsilon_{t+H}$$

If y_{t+h} is a vector of independent variables, then the first relation is written (Γ_i is the matrix of coefficients of final form linear combinations):

$\tilde{y}(x_{t+H}^1, \dots, x_{t+1}^1) = \hat{y}(x_{t+H}^0, \dots, x_{t+1}^0) + \Gamma_0(x_{t+H}^1 - x_{t+H}^0) + \Gamma_1(x_{t+H-1}^1 - x_{t+H-1}^0) + \dots + \Gamma_{H-1}(x_{t+1}^1 - x_{t+1}^0)$ Using a similar reasoning we obtain:

$$e_{t+H} = y_{t+H} - \hat{y}(x_{t+H}, x_{t+H-1}, \dots, x_{t+1}) = \Gamma_0(x_{t+H}^1 - x_{t+H}^0) + \Gamma_1(x_{t+H-1}^1 - x_{t+H-1}^0) + \dots + \Gamma_{H-1}(x_{t+1}^1 - x_{t+1}^0) + \varepsilon_{t+H}$$

If we consider a dynamic model with simultaneous equations in structural form, the residual vector, u_{t+H} , is an approximation of the central forecast. As a consequence of the shocks appeared in residual variable after "i" periods, the predictors modify, their effects or reactions being the elements of ψ_i matrix. In these conditions, the vector of pure errors can be written :

$$\varepsilon_{t+H} = \psi_0 u_{t+H} + \psi_1 u_{t+H-1} + \dots + \psi_{H-1} u_{t+1}$$

Finally, we reach the following relation, which is crucial from the perspective that it breaks down the total error in the error of conditioning variables and the pure error:

$$e_{t+H} = \psi_0 u_{t+H} + \psi_1 u_{t+H-1} + \dots + \psi_{H-1} u_{t+1} + \Gamma_0(x_{t+H}^1 - x_{t+H}^0) + \Gamma_1(x_{t+H-1}^1 - x_{t+H-1}^0) + \dots + \Gamma_{H-1}(x_{t+1}^1 - x_{t+1}^0) + \varepsilon_{t+H}$$

The importance of these linear equations is determined by the fact that on their bases, marginal probability distributions are determined and fan charts and confidence bands are drawn.

B. Tpn aggregation in BoE methodology

A random variable, z , has a two-piece normal distribution (tpn) with parameters $(\mu, \sigma_1, \sigma_2)$. If its probability density function exists, it checks: $f(z) = \alpha_1 \phi(z / \mu, \sigma_1^2), z \leq \mu$, where $\phi(z / \mu, \sigma_i^2)$ is the

probability density of a normal distribution with parameters (μ, σ_i) and $\alpha_i = \frac{\sigma_i}{\sigma_1 + \sigma_2}$. John (1982)

shows the following relations for average, variance and the moment of 3 order

$$E(z) = \mu + (\sigma_2 - \sigma_1) \sqrt{\frac{2}{\pi}}, Var(z) = (1 - \frac{2}{\pi})(\sigma_2 - \sigma_1)^2 + \sigma_1 \sigma_2, M_3 = (\sigma_2 - \sigma_1) \sqrt{\frac{2}{\pi}} [(\frac{4}{\pi} - 1)(\sigma_2 - \sigma_1)^2 + \sigma_1 \sigma_2]$$

If the standard deviations are different, the distribution is asymmetrical, and in case of equal deviations classical normal distribution results, which is symmetric.

In vectorial terms, if e is the total error, z the vector of input variables and a the vector of coefficients, we can write the linear combination using the relation: $e = az$. Modal values of input variables are zero.

We consider the variance and the mode quantile, denoted, $Var(z_n)$ respectively $P(z_n \leq Mo(z_n))$

. In order to calculate the average of input variables it is necessary to determine the standard deviations, which are obtained by solving the following equations system:

After solving the above equations system we can determine the mean of the input variables:

$$E(z_n) = (\sigma_{2n} - \sigma_{1n}) \sqrt{\frac{2}{\pi}}$$

The total forecast error mean is zero. Given the assumption of independence, the variance of error e is obtained by summing the weighted variances of the input variables. We approximate error distribution by TPN, the values of standard deviations being determined by solving the following system:

$$\sum_n a_n E(z_n) = (\sigma_2 - \sigma_1) \sqrt{\frac{2}{\pi}}$$

$$\sum_n a_n^2 Var(z_n) = (\sigma_2 - \sigma_1)^2 \left(1 - \frac{2}{\pi}\right) + \sigma_1 \cdot \sigma_2$$

There are several parameterizations of the split normal distribution (tpn). N. Banerjee and A. Das (2011) proposed two equivalent parameterizations. In a first variant of parameterization, the probability is

$$P(li \leq x \leq ls) = \frac{2\sigma_1}{\sigma_1 + \sigma_2} \left[\phi\left(\frac{ls - \mu}{\sigma_1}\right) - \phi\left(\frac{li - \mu}{\sigma_1}\right) \right], \text{ pentru } li < ls \leq \mu$$

calculated as:
$$P(li \leq x \leq ls) = \frac{2\sigma_1}{\sigma_1 + \sigma_2} \left[\phi\left(\frac{ls - \mu}{\sigma_2}\right) - \phi\left(\frac{li - \mu}{\sigma_2}\right) \right], \text{ pentru } \mu \leq li < ls$$

$$P(li \leq x \leq ls) = \frac{2\sigma_1}{\sigma_1 + \sigma_2} \left[\sigma_2 \cdot \phi\left(\frac{ls - \mu}{\sigma_2}\right) - \sigma_1 \cdot \phi\left(\frac{li - \mu}{\sigma_1}\right) + \frac{\sigma_1 - \sigma_2}{2} \right], \text{ pentru } li \leq \mu < ls$$

We will specify the version of parameterization proposed by Johnson, Kotz and Balakrishnan (1994), in which the distribution has three parameters: the mode (Mo), the uncertainty or the standard deviation (σ) and the skewness or asymmetry (Y). The probability density has the following form:

$$f_X(x; Mo, \sigma, Y) = \frac{A}{\sigma\sqrt{2\pi}} e^{-\frac{1-\gamma}{2\sigma^2}(x-Mo)^2}, x \leq Mo$$

$$f_X(x; Mo, \sigma, Y) = \frac{A}{\sigma\sqrt{2\pi}} e^{-\frac{1+\gamma}{2\sigma^2}(x-Mo)^2}, x > Mo$$

$-1 < Y < 1$ is the inverse of the skewness coefficient, and A is a normalization constant. The formulas to

calculate the standard deviations of a split normal distribution are given by: $\sigma_1 = \sqrt{\frac{\sigma^2}{1-\gamma}}$ and $\sigma_2 = \sqrt{\frac{\sigma^2}{1+\gamma}}$.

1. Dacă $Y > 0, \sigma_1 > \sigma_2 \Rightarrow$ biased to the left distribution
2. Dacă $Y < 0, \sigma_1 < \sigma_2 \Rightarrow$ biased to the right distribution
3. Dacă $Y = 0, \sigma_1 = \sigma_2 \Rightarrow$ normal distribution

$$\text{The balance of risk : } p = \frac{\sigma_1}{\sigma_1 + \sigma_2} = \frac{\frac{\sigma}{\sqrt{1-\gamma}}}{\frac{\sigma}{\sqrt{1-\gamma}} + \frac{\sigma}{\sqrt{1+\gamma}}} = \frac{1}{1 + \sqrt{\frac{1-\gamma}{1+\gamma}}} \Rightarrow \frac{1}{p} = 1 + \sqrt{\frac{1-\gamma}{1+\gamma}} \Rightarrow$$

$$1 + \frac{1-\gamma}{1+\gamma} = \frac{(1-p)^2}{p^2} + 1 \Rightarrow \frac{2}{1+\gamma} = \frac{1-2p+2p^2}{p^2} \Rightarrow \gamma = \frac{2p-1}{2p^2-2p+1}. \xi \text{ is the skewness indicator.}$$

$$\text{Thus, } \xi = \overline{Mo} - Mo = (\sigma_2 - \sigma_1) \sqrt{\frac{2}{\pi}} = \left(\sqrt{\frac{\sigma^2}{1+\gamma}} - \sqrt{\frac{\sigma^2}{1-\gamma}} \right) \cdot \sqrt{\frac{2}{\pi}}, \beta = \xi^2 \frac{\pi}{2\sigma^2}.$$

$$\gamma = -\sqrt{1 - \left(\frac{-1 + \sqrt{1+2\beta}}{\beta}\right)^2}, \text{ for } \xi > 0 \quad \gamma = \sqrt{1 - \left(\frac{-1 + \sqrt{1+2\beta}}{\beta}\right)^2}, \text{ for } \xi < 0$$

Wallis (1999) notes the following limits of the BoE methodology for fan charts: the chose of the mode implies a too restrictive loss function, building confidence intervals around the mode asymmetry affects the method used to determinate the skewness of the distribution.

These include the fact that the fan charts are used to evaluate the risk and the uncertainty in the economy, that will be taken into account in establishing the economic policies. The banks' activity of forecasting is based on this graphical representation. Economic analysis will take into account the possible shocks that may occur in the economy. In making predictions, knowledge of uncertainty and of risk balance is essential.

If $f_X(x)$ is a probability density function, the highest probability density function (α) corresponds to the shortest interval $[x1;x2]$ such as $P(x1 < X < x2) = \alpha$.

$f_X(x)$ If the interval $[x1;x2]$ satisfies the following properties:

- $\int_{x1}^{x2} f_X(x)dx = \alpha$;

- $f_X(x1) = f_X(x2) > 0$

- $x1 < \mu_0 < x2$, where μ_0 is the unique mode

then $[x1;x2]$ is the shortest interval satisfying 1.

For the split normal density, the HPD region of size α is :

$$x1 = \mu_0 + \sigma_2 \cdot \phi^{-1}\left(1 - \frac{\alpha}{2}\right)$$

$$x2 = \mu_0 - \sigma_1 \cdot \frac{x2 - \mu_0}{\sigma_2}$$

If the historical RMSE of revision are denoted as σ_{T-h}^2 for a horizon h, before the end of the sample, the variable estimated mode is μ_{T-h} and the balance of risk $p_{T-h} = P(X_{T-h} < \mu_{T-h})$, for $h = 0, 1, \dots, H$.

4. A fan chart to assess the uncertainty for inflation rate forecasts in romania

An empirical example for the realization of a fan chart is made for Romania for forecasts made for 2011 Q1-2013 Q3. We will use the following notations while computing the fan chart :

Current No.	Notation	Significance
1.	h	Forecast horizon
2.	X_t^i	Factor that affects the inflation rate
3.	μ_t^i	More likely value for the i-th factor at time t
4.	p_t^i	Balance of risk for the i-th factor at time t
5.	σ_t^i	Forecast error standard deviation for the i-th factor at time t
6.	n2	Number of factors for which $p_t^i = 0,5$
7.	π_t^i	Inflation rate at time t
8.	μ_t^π	More likely inflation rate at time t
9.	p_t^π	Balance of risk for the inflation rate at time t
10.	σ_t^π	Forecast error standard deviation for the inflation rate at time t
11.	ϕ_j^i	Response of π_{t+j} to an impulse in X_t^i
12.	ξ_t^i	Bias indicator of i-th factor at time t
13.	ξ_t^π	Bias indicator of the inflation rate at time t
14.	γ_t^i	Inverse bias indicator of i-th factor at time t
15.	γ_t^π	Inverse bias indicator of the inflation rate at time t

To compute the fan chart we have to determine $(\mu_{t+h|t}^{\pi}, \sigma_{1,t+h|t}^{\pi}, \sigma_{2,t+h|t}^{\pi})$, where $h=1,2,\dots,9$. To calculate this triplet, we have to follow 2 steps:

1. Determination of more likely inflation forecast path $(\mu_{t+h|t}^{\pi})$;
2. Computation of fan chart, which supposes the determination of $(\sigma_{1,t+h|t}^{\pi}, \sigma_{2,t+h|t}^{\pi})$.

1. Inflation rate forecast

- we identify the factors that may affect the inflation rate (X_t^i) over the forecasting horizon and we determine their more likely path $(\mu_{t+h|t}^{\pi})$;
- we compute the more likely short term inflation prediction knowing the factors paths and the data series for inflation up to time t . In this case we use some different models;
- we use an AR(1) model to compute the more likely inflation rate on medium term, $\mu_{t+h|t}^{\pi}$, for $h=3,4,\dots,9$.

The model used to predict the inflation rate is: $\log \frac{\pi_{t-1}}{\pi_{t-2}} = 0,485 \cdot \log \frac{\pi_{t-2}}{\pi_{t-3}} + \varepsilon_t$.

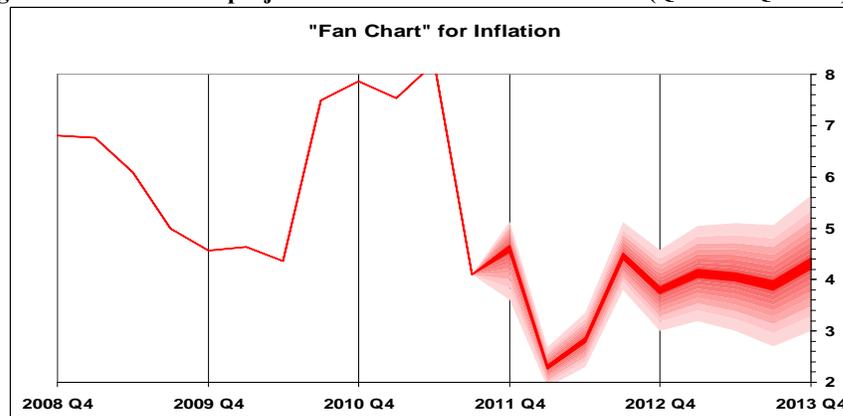
- we compute the forecast error standard deviation of the inflation rate, which is the sum of two components: historical forecast error standard deviation estimation and an uncertainty multiplier.

2. Fan chart computation

- we classify the factors according to the balance of risks and we select only those factors for which $p_{t+h|h}^i \neq 0,5$ for at least one point in time in the forecast horizon;
- we compute the forecast error standard deviation of the factors and the response of the inflation rate to one unit impulse in each factor ϕ_{h-1}^i ;
- we transform the forecast error standard deviation and the factors balance of risks into skewness indicators using the formulas;
- The factors' skewness indicators are transformed into inflation rate skewness indicators by using the impulse response function;
- The inflation rate forecast error standard deviation and its skewness indicators are transformed into left and right standard deviations using some formulas above;
- we compute the percentiles of the inflation forecast;
- we compute the probability table, the expected forecasts and the median.

The program used to build the fan chart is developed using MS Office Excel 2003 in Visual Basic. Distribution parameters and probabilities are found in *Appendix 1*.

Figure 2: Fan chart for projected rates of inflation in Romania (Q4 2011-Q4 2013)



Source: own computations in Excel

Providing an evaluation of uncertainty is related to the effectiveness with which an institution fails to influence the economic activity. The methodology used by bnr is a simple one, like measure of global medium uncertainty for the rate on inflation based on its macroeconomic short-term forecast model

is used the mean absolute error (mae-mean absolute error). This synthetic indicator includes all effects of unanticipated past shocks that led the deviation of the expected values from the registered ones. Based on this type of error prediction, forecasting intervals are built, bnr numbering several advantages of its methodology:

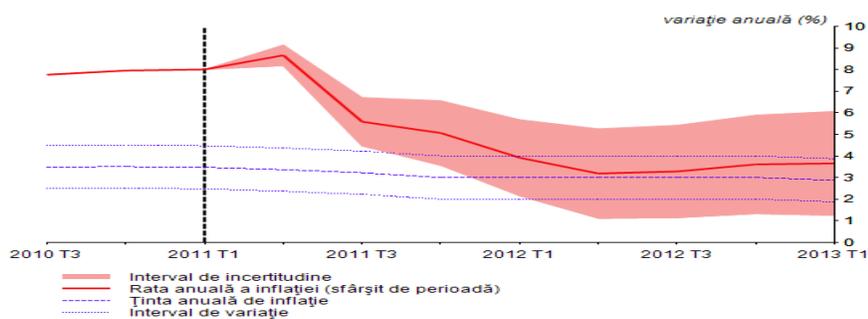
- it considers all the previous shocks that have affected the rate of inflation;
- it determines a classification of the deviations from the actual values in the history of projections: deviations that determined an overestimation of the projected inflation and deviations that generated an underestimation;
- the methodology excludes any arbitrary assumption about the action of individual risk factors;
- it allows the adjustment of intervals of uncertainty, so that they reflect the assessments of different agents regarding the magnitude of the future uncertainty in relation with the one of previous periods.

The interval of uncertainty built by bnr is a very simple one, far from the complex methodology proposed by the boe. This aspect can be noticed from the chart below. Unlike the fan chart, where the shadow depth is assessed, the bnr chart makes no distinction between degrees of uncertainty and it does not consider the forecast distribution. It does not consider the uncertainty in terms of probabilities, but it evaluates only an indicator of prediction accuracy. As a synthetic indicator, the mae is not able to identify the most important factors in the forecasting horizon. Some methodological notes are necessary in building the interval of uncertainty:

- prediction errors are calculated as the difference between predicted values based on the forecasting model and actual values on medium term of the rate of inflation rate for forecasting horizons of 1 to 8 quarters;
- values of the inflations are the mean quarterly ones;
- the obtained values were logarithmically adjusted to eliminate the irregular trend of concentration of uncertainty at different forecasting horizons, but also to smooth the intervals limits.

Unlike the RMSE indicator, the indicator for forecasting error MAE is less sensitive to large prediction errors. If the dataset is small MAE is recommended, but the most institutions use RMSE as its unit of measurement is the same as the one of the indicator which is calculated. RMSE is always at least equal to the MAE. Equality occurs if the errors have the same magnitude. The difference between the MAE and the RMSE is higher, the greater the variability of the data series. RMSE is affected by generalized variance, the interpolation, the errors in the phase and by the presence of outliers.

Figure 3: The interval of uncertainty for projections of inflation rate in Romania (from 2011-Q1 2013)



Source: National Bank of Romania (www.bnr.ro)

5. Conclusions

One of the suggestive ways to evaluate the macroeconomic forecasts uncertainty based on the models is to build fan charts, best known methodology being the one of the Bank of England. Although scientists have pointed certain weaknesses of it, fan chart continues to be used by more central banks, some researchers bringing improvements to the assumptions used in building this type of graphic.

The methodology used by the BNR to build the interval of uncertainty for inflation is very simple and it could be improved or replaced with the methodology of building fan charts, because it is not based

on probabilistic approach, but only on mean absolute error. We have built a fan chart to evaluate the inflation forecast uncertainty in Romania using BoE methodology.

In periods of crisis the uncertainty grows, so a simple method like that proposed by the National Bank of Romania is not recommended. A fan chart is the best solution to assess the uncertainty in those cases, taking into account the factors that are very probably to influence the inflation on the forecasting horizon. In conclusion, the fan chart is a good measure of highlighting the inflation forecast uncertainty, being very useful for the establishment of the monetary policy of central banks.

6. References

- Banerjee N., Das A. (2011), *Fan Chart: Methodology and its Application to Inflation Forecasting in India*, Departement of Economic and Policy Research
- Britton E., Fisher P., Whitley J. (1998), *The Inflation Report projections: understanding the fan chart*, Bank of England Quarterly Bulletin
- Ericsson N. (2001), *Forecast Uncertainty in Economic Modeling*, MIT Press, Cambridge, p. 68-92
- Galbraith J.W., van Norden S. (2011), *GDP and Inflation Probability Forecasts Derived from the Bank of England Fan Charts*, Department of Economics, McGill University
- Julio J.M. (2009), *The HDP Chart with data revision*, Borradores Semanales de Econom, no. 478
- Novo A., Pinheiro M. (2003), *Uncertainty and risk analysis of macroeconomic forecasts: fan charts revised*, Economic Research Department, Banco de Portugal
- Osterholm P. (2008), *A structural Bayesian VAR for model-based fan charts*, Applied Economics, Volum 40, p. 1557 - 1569
- Vega M. (2003), *Policy Makers Priors and Inflation Density Forecasts*, Working Paper, Banco Central de la Reserva del Perú
- Wallis K. F. (2004), *An Assessment of Bank of England and National Institute Inflation Forecast Uncertainties*, Department of Economics, University of Warwick, Coventry CV4 7AL
- Wallis K. F. (2008), *Forecast uncertainty, its representation and evaluation*, World Scientific Publishing Co. Pte. Ltd., Econometric Forecasting and high-frequency data analysis
- <http://www.bnr.ro/>
- <http://www.insse.ro>

APPENDIX 1

Table 1: Parameters of the forecast distribution

Indicator	T4 2011	T1 2012	T2 2012	T3 2012	T4 2012	T1 2013	T2 2013	T3 2013	T4 2013
Mode (%)	2,7	3,6	3,2	3,5	3,1	2,9	2,87	2,8	2,75
Mean (%)	3,2	3,6	3,2	3,5	3,1	2,9	2,87	2,8	2,75
Target (%)	3,00	3,00	3,00	3,00	3,00	2,50	2,50	2,50	2,50
Std deviation	0,60	0,24	0,32	0,40	0,48	0,56	0,64	0,72	0,24
Bias	0,5	0	0	0	0	0	0	0	0

Source: own computations

Table 2: Estimated probability that the rate of inflation will falls into various intervals

	T4 2011	T1 2012	T2 2012	T3 2012	T4 2012	T1 2013	T2 2013	T3 2013	T4 2013
Pr. {<3,5%}	28,16%	57,62%	43,37%	47,88%	36,94%	39,11%	33,23%	29,18%	26,94%
Pr. {3,5%-4%}	63,79%	37,46%	31,84%	33,12%	13,29%	28,52%	18,11%	17,56%	19,61%
Pr. {4%-4,5%}	7,94%	3,70%	24,46%	18,25%	12,67%	19,89%	28,92%	27,14%	23,29%
Pr. {4,5%-5%}	0,00%	0,41%	0,32%	0,72%	19,62%	7,70%	4,67%	5,91%	8,98%
Pr. {5%-5,5%}	0,00%	0,73%	0,00%	0,03%	12,98%	3,73%	11,93%	14,13%	12,67%
Pr. {5,5%-6%}	0,00%	0,07%	0,00%	0,00%	2,58%	0,76%	0,57%	1,11%	2,58%
Pr. {6%-6,5%}	0,00%	0,00%	0,00%	0,00%	0,83%	0,25%	2,32%	4,12%	4,33%
Pr. {6,5%-7%}	0,00%	0,00%	0,00%	0,00%	0,33%	0,03%	0,03%	0,12%	0,47%
Pr. {7%-7,5%}	0,00%	0,00%	0,00%	0,00%	0,23%	0,01%	0,21%	0,67%	0,93%
Pr. {7,5%-8%}	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,01%	0,06%	0,14%
Pr. {8%-8,5%}	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Pr. {>8,5%}	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Pr. {<MOD><p>	89,73%	50,00%							

Source: own computations

CRISIS AND FINANCIAL REGULATION

BRATU Renate Doina

Ph. D. Teaching assistant, Faculty of Economic Sciences, LucianBlagaUniversity of Sibiu, Sibiu, Romania, renate.bratu@ulbsibiu.ro

ȚĂRAN – MOROȘAN Adrian

Ph. D. Assistant professor, Faculty of Economic Sciences, LucianBlagaUniversity of Sibiu, Sibiu, Romania, adrian.moroșan@ulbsibiu.ro

Abstract: *The article purpose is to find out if the regulation is one of the factors of the crisis in the economic phenomenon. To realize this aim of the paper we use the methodological approach based on logical judgment and on the own critical approach of the regulation act. The main results of the paper are that the regulation could be a cause of the crisis on the individual business cycle analyzed. In the same way, we also find out, that the cycle of the regulation is slower than business cycle, and, we conclude that, this could be the way that regulation could become a cause of the crisis.*

Key words: regulation, deregulation, crisis, pro-cyclic, counter - cycle

JEL classification: B 41, B 52, G 18, G 28

1. Introduction

Evolutionary and social system is inherently subject to significant conditions that may be it violent or potentially violent (Warrenp, 1978). Potentially violent situations important in future periods close aspirations are different business entities and phenomena generated by the crisis. Causes than can generate crises, whatever level that triggers (administrative, social, economic, philosophical) are multiple and sometimes elusive clear. The phenomenon of the crisis triggered in September 2007, located in the U.S., brings into discussion a provocative question: regulation in a cause or an effect of the crisis? There are authors who consider that the regulation as a input process of the crisis, others, and the most of them, consider that as an output of crisis – for example, US regulation (Fabozzi, Modigliani, 2010).

The scientific approach followed the principle of scientific research a methodological approach based on logic that creates the correlation between economic social system (who takes a spiral form called progressive economic cycles) and financial regulation process.

The paper aims are to clarify, the highest possible degree, from the methodological point of view, where the financial regulation process is located on the map of cyclical economic and the report it to act called “crisis”. The results show that regulation, logically, is a result of the crisis, in the business cycle analyzed. In the next economic cycle financial regulation may become the origin of the pulse generating future violent situations. We also found that what brings the regulatory process to causality of effect of crisis in cyclical economic phenomenon is the speed at which regulation is achieved, in the parallel way.

2. Logical aspects of financial regulation and economic crisis

Regulation is a set of rules adopted to achieve the objectives of issuing authority, usually the state, by specific institutions. The main reason to exercise the regulation is the failure of markets. A market is in the failure state if it can not maintain, on their way, the competition in that market. It is considered that the market, let to act alone, will not produce specific products and services as efficient and at the lowest specific cost. In financial system, the goals of the regulatory require to protect the issuers of securities by the fraud of the investors by compiling information, promoting trust and competition in securities trading, promoting financial institutions stability, limiting the activity of foreign financial groups in some internal markets, controlling the level of economic activity (Fabozzi, Modigliani, 2010).

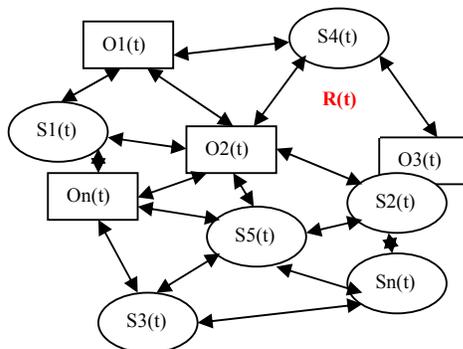
From a logical standpoint, we believe that regulation is a property of the social system. If we are agreeing whit this, we can say about regulation that is necessary of the social system (without which there can be). Here some arguments:

- a) In social system act two distinct entities – economic subject and the object of economic. In this way, we must know the characteristics of economic subject (non-sustainable entity,

teleological, axiological, non-individual, with contingent activity and property coverage) which it determines its behavior in different situations. At the same landscape, we observe the characteristics of object economic too (entity non-renewable, substitutable, with predictable reactivity and non ability to reflect) which can may be the origin of input for behaviors of the economic subject in some situations, in time.

- b) The social system is based on interdependence. For the economic subject to use teleological exercises feature “socializing (in the meaning of civil language) relating with other economic subjects and acting on economic objectives.
- c) The social system is “social ordered”. Social order is based on generative and evolutionary principles. Evolutionary principles imply causality principle, the principle of complete intelligibility (by representing the world, offering for social system representation and meaning) and teleological principle (the making system for programming and thus generate to social cultural economic subjects desire path – denying the need). Evolutionary principles are inherent to the development of social system subject under perceived physical time, and in the parallel, the transformation of the social system under social time (teleology) (Dinga, 2011). Just two “times” – physical and teleological – the social system determines the cyclical order. A consequence of the social order is that the social system is “legal ordered”. Social order is “creative” and innovative. A vehicle of innovation may be the standardization or imposing the rules, the law, which can stimulate creation of desirable behavior of the economic subjects to achieve of aim. That means to exercise regulation (formal and non-formal).

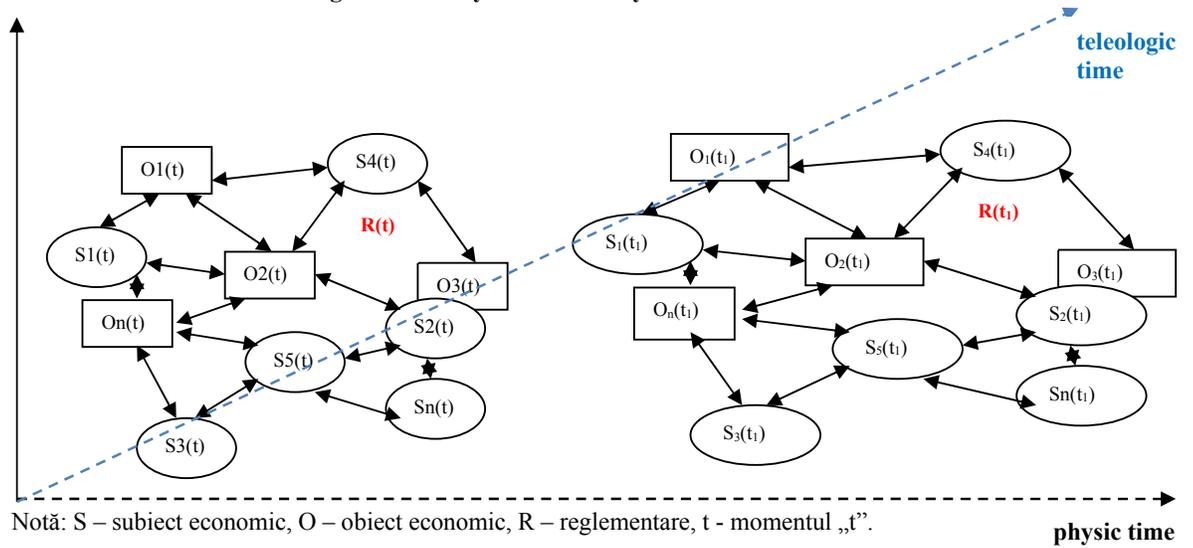
Figure 1: The social system, the “t’ moment



Therefore, if the social system is necessarily evolutionary, cyclic, it can say that “normalization” as a property of the social system is necessary and cyclical (figure 2).

Economic regulation is a species of regulation. It established rules for actionable behavior to model the financial system to achieve a specific purpose and generally and widely recognized – the stability of financial system. If we consider the financial system as a species of social system, we consider that financial system reflects the positive outcome of economic subject’s aspirations and individual and aggregate. Moreover, the positive aspirations of business entities are based on normative order, respectively on the regulators. When pulses are manifest and generative perspectives of the economic subject’s aspirations, violent situations occur in the social systems that are the crises. In this context, the financial system will face an economic crisis that will lead to the emergence of the new problems. These problems require a solution by generating pulses that will change the trajectory aspirations again on a positive way to the economic subjects. That means that will have to reconfigure the rules, respectively the financial regulation. Like this, the system can opt for various forms of economic regulation, namely deregulation (according to some authors – liberalization) or reregulation (which means the modification of previously established rules).

Figure 2: The dynamic social system



Therefore, logically, as previously said, the economic regulation is a process linked to the economic process, both owned by necessity, by cyclicity. As the economic phenomenon, the form of cyclical economic regulatory process results in a progressive or regressive spiral effect (depending on quantity and quality values associated to the regulatory process and hence to the economic subjects aspirations). Difference to the spiral shape associated cyclical economic process is the amplitude of the spiral. In the case of regulatory process, the spiral takes a more “wide” form, towards the economic process spiral width is more “close”. (figure 3 and figure 4).

Figure 3: The economic process ciclicity

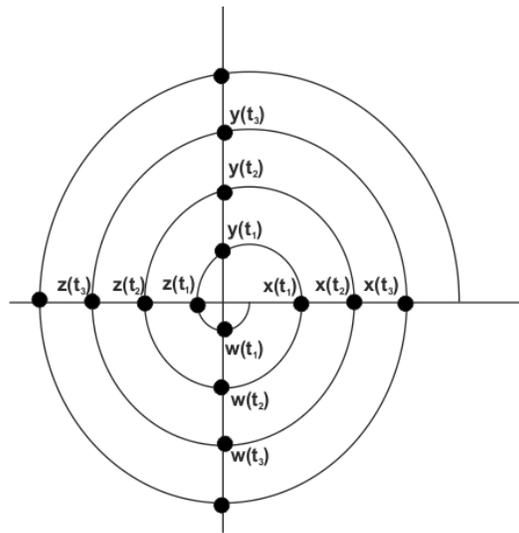
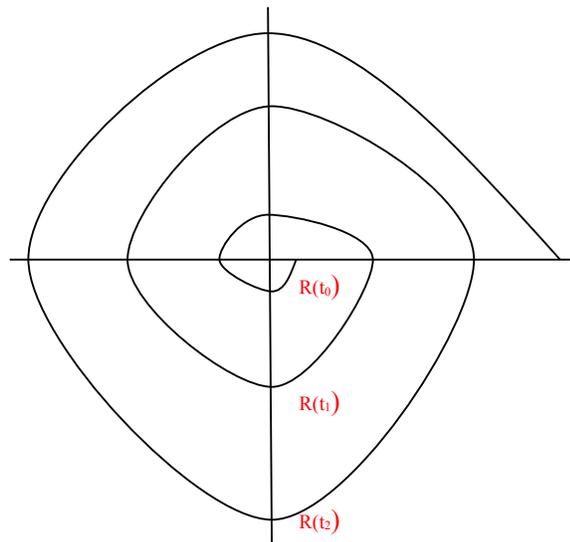


Figure 4: The regulation process ciclicity



Deductive, we consider that the cyclic form of the two closely related processes is generated by acceleration of its own expression (or responsiveness) of the two processes, in the name of the proper time, the teleological time. Cyclical economic acceleration process is much more intense than the cyclical acceleration of the financial regulation, which is less intense. That's why this might be the following:

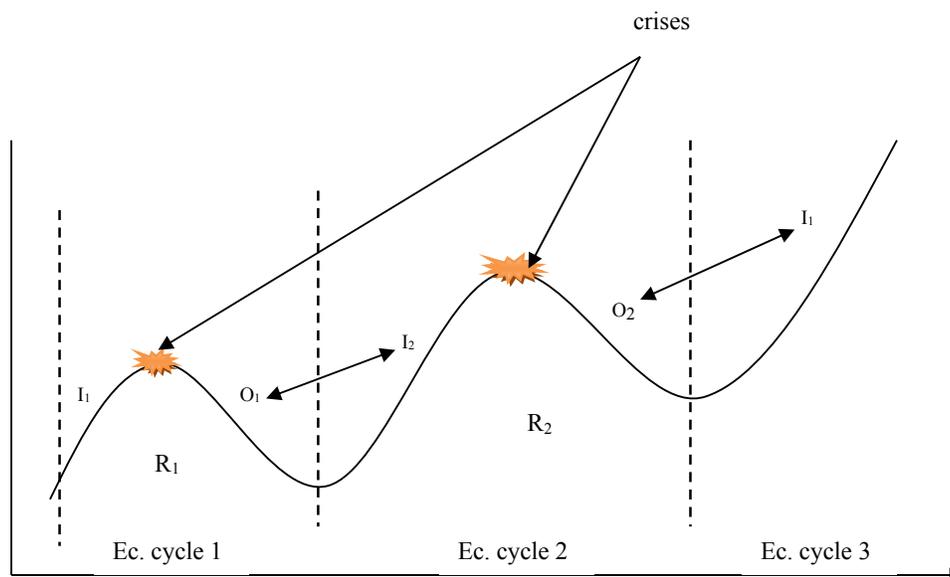
- Acceleration of the economic process is increased, in the current capitalist system by the phenomenon of globalization and by the economic integration phenomenon of the national,

regional and international financial systems. Although, depending on the degree of financial market development and the liquidity of that financial markets, there is the speed of evolution of the economic process that it manifest passing through cyclical phases. A question arises here, that is whether there should be considered separately speed manifestation of economic cycle itself (the correlation of real flows – financial flows) by the speed of manifestation of the financial cycle (the correlation of real flows – financial flows – nominal flows);

- Acceleration of economic regulation process is enhanced by the frequency of important situations, like economic crises, structural-administrative reorganization, institutional reconfiguration, social crises, political crises, conflicts between nations, etc.

Thus, our opinion is that because of this difference, economic regulation (with all its scientific forms) can be considered, in certain contexts, cause of economic crisis or, conversely, the effect of economic crisis. (Figure 5).

Figure 5: Positioning economic regulation in relation to economic cycles



Notă: I – input (cause or origin of the pulse), O – output (effect or destination of the pulse), R – regulation

To support the idea that the regulation is one of the effect of the crisis, but may become a cause of it, consider the following reasoning:

Suppose:

- I and O, possible forms of economic regulation, namely deregulation, regulatory, re-regulatory or other regulatory forms of economic process,
- Economic cycle 1: new problems after the crisis hit financial system. Makers, governments and/or specific official institutions (like central banks, various supervisors of the financial system or some of its components – banking, insurance, financial investment sector, etc.) adopts new rules by which redirect behaviors of participants in the social system, to restore positivity of aspiration of the economic subjects. Specifically, to restore the confidence and the stability of financial system. Thus, O_1 appears like effect as a species of economic regulation. In the next period, will be switching to the businesscycle recession phase 1 to phase of recovery and boom of the economic cycle 2. In this cycle, I_2 represents a cause which will generate the start of the crisis in this economic cycle.
- transition from economic cycle 1 to economic cycle 2: It is possible that the form of regulation adopt in the economic cycle 1 – O_1 – to become I_2 in the next economic cycle. This means, that regulation transform itself from effect of the crisis into cause of the crisis, but just in the next economic cycle, and will represent a cause for the other form of crisis.
- transition of regulation from effect position in cause position, in different economic cycles may be presented like this:

- $R_1 = I_1 + O_1; R_2 = I_2 + O_2$ (1)
- $O_1 = I_2$, (2)
(from the point of view of causality),
- $O_1 < I_2$ or $O_1 > I_2$ (3)
(from the point of view of the forms of regulation, namely, from deregulation can pass to regulation or re-regulation; or reverse situation when it can transform itself from re-regulation to regulation or deregulation).

Consequently, we believe that financial system regulation problem isn't "quantitative". Namely, the system is under-regulated (liberalized, deregulate, unregulated) and like this appearing situations in which unregulated sectors or less regulated or poorly regulated generate the appearing of the financial crisis. Or, the system is overregulated (regulated or reregulated). Thus confining the optimal manifestation of competition in the field or slow development of one financial markets relative to other financial markets. That can generate the new state of "conflict", respectively the financial crisis. In our opinion, the problem is the contradiction between the cyclic evolutions of the economic process in relation with the cyclic evolution of the regulatory process. Acceleration with which they occur. Namely, the speed of response of regulators in relation to globalization process and financial integration process, and implicitly with financial innovations that appear in the system. Also, there could be such a correlation that can occur between certain real flows, financial flows and innovative nominal flows (the new financial instruments) and the ability of regulators to capture, in time, this correlation, for purposes of compliance with rapidly proposed.

3. Conclusions

Regulation represents a species of the Institutionalism seeking exercising behaviours of groups and thus achieves specific goals. For the financial system, the regulation and its forms are performed to achieve financial stability. Economic cyclicality imposes to adopt rules to restore individual aspirations on the positive trend, particularly after the manifestation of crisis. With all that those regulation can become "overcome" by the innovation and development of the financial system, which may cause that the previously regulations adopted to become concerned for future violent situations. So the question arises as one of "acceleration" of the regulatory process. What policy makers should consider is developing mechanism to adapt faster the cyclicity regulations to the cyclical economic.

4. Acknowledgements

This work was supported by the project "Post-Doctoral Studies in Economics: training program for elite researchers - SPODE" co-funded from the European Social Fund through the Development of Human Resources Operational Programme 2007-2013, contract no. POSDRU/89/1.5/S/61755.

5. References

- Dalvinder, S. & LaBrosse, J.R. (2011). Developing a Framework for Effective Financial Crisis Management, *OECD Journal: Financial Market Trends, Volume 2011, Issue 2*.
- Dinga, E. (2009). *Studii de economie. Contribuții de analiză logică, epistemologică și metodologică*, Editura Economică, București.
- Fabozzi, F. J., Modigliani, F., Jones, F. J. (2010). *Foundation of Financial Markets and Institutions*, Fourth Edition, Pearson Education, Inc., Upper Saddle River, New Jersey, 07458.
- Goodhart, C. A. E., (2011). The Macro-prudential Authority: Powers, Scope and Accountability, *OECD Journal: Financial Market Trends, Volume 2011, Issue 2*.
- Greuning, H., Brajovic Bratanovic, S. (2004). *Analyzing and Managing Banking Risk. A Framework for Assessing Corporate Governance and Financial Risk*, The International Bank for Reconstruction and Development / World Bank, Editura Irecson, București.
- Laeven, L., Valencia, F. (2008). Systemic Banking Crises: A New Database, *IMF Working Paper*.
- Popescu, G. (2009). *Evoluția gândirii economice*, Ediția a IV – a, Editura C. H. Beck, București
- Valier, J. (2009). *Scurtă istorie a gândirii economice de la Aristotel până azi*, Editura Compania, București.
- White, L., (1999). *The Role of Financial Regulation in a World of Deregulation and Market Forces*, Stern School of Business, New York University.

- IMF (2009). *Lessons of the Financial Crisis for Future Regulation of Financial Institutions and Markets and for Liquidity Management*.
- OECD (1997). *Synthesis Regulatory Reform: A Synthesis*, Paris.
- OECD (2009). *Policy Framework for Effective and Efficient Financial Regulation. Recommendation and Principles*.
- OECD (2009). *The Financial Crisis. Reform and Exit Strategies*.
- OECD (2010). *Policy framework for effective and efficient financial regulation. General guidance and high-level checklist*.

WHICH ARE THE FUTURE REVENUES OF THE EUROPEAN UNION SINCE 2014?

BUNESCU Liliana

*Teaching assistant/Ph.D. Student, Faculty of Economics, Lucian Blaga University of Sibiu,
Sibiu, Romania, liliana_sibiu@yahoo.com*

COMANICIU Carmen

*Ph. D. Professor, Faculty of Economic Sciences, Lucian Blaga University of Sibiu,
Sibiu, Romania, carmen_comaniciu@yahoo.com*

Abstract: *The new EU multiannual financial framework must bring some changes in methods of EU funding. European public revenue reform is needed to cover the weaknesses in the period 2007-2013. The EU financing reform covers three main elements: the simplification of the Member States' contributions, the introduction of new own resources, and the reform of correction mechanisms. This paper begins with a presentation and analysis of current EU funding system, of its characteristics, but it also contains a number of proposals for the new revenues of the EU budget from 2014 to 2020.*

Key words: financial activities taxes, EU companies' income tax, European energy tax

JEL classification: H 27, H 87, F 36

1. Introduction

European Union's annual budget amounts to over € 100 billion and represents only about 1% of revenues generated by the Member States each year. The European budget is devoted to take measures to improve the lives of EU citizens and EU communities. These concerns, in particular, some measures for the less developed and disadvantaged groups, and some measures to create more jobs and to create economic growth in the EU. EU budget revenues are subject of treaties data constraints, the existence of "own resources ceiling" (this corresponds to an average of about 293 EUR per EU citizen) [European Commission, 2010, p.7], a multiannual financial framework agreed by the European Parliament, Council and European Commission, which controls EU budget development for a period of time, but also financial regulations adopted by the Council and Parliament. These provide some rules for the preparation, execution, management and audit of the budget. EU multiannual budget planning covers three main ideas: setting a ceiling for commitment appropriations, establishing an overall ceiling of expenses and setting a ceiling of own resources. Own resources ceiling is set at 1.23% of EU GNI by 2010. Between the ceiling of expenses and the ceiling of revenues is a margin that serves to edit the ceilings for unforeseen events, but also allows keeping a reserve in case of unforeseen developments of revenues or expenditures.

According to the article no. 312 of EU Treaty, the multiannual financial framework provides financial resources in an orderly manner, and within the limits. Annual budgets are built in compliance with the planning document. Multiannual financial framework sets EU priorities and establish long-term maximum annual amount to be spent on each priority basis. It is built over a period of 7 years (2000-2006, 2007-2013, 2014-2020), and 3 years before completing a framework is proposed a new multiannual framework. Annual budgets are built within the limits of the multiannual framework. EU spends only the resources it receives. To fulfill its objectives, the EU needs an optimal mix of own resources. The paper includes an analysis of the system of EU financial resources, it highlights some of their features and it is calling into question a number of new revenues to finance the EU budget after 2014.

2. A short analysis of current public money of Europe

EU resources system is the result of successive changes of the original system introduced in 1970. During 1958-1970 the budget was a system based on national contributions. It was funded exclusively on this way. So, in 1970 it was introduced the first system of own resources to implement in 1971 and assumed the existence of customs duties and agricultural levies and harmonized VAT-based resource. During 1975-1987, revenues' growth from own resources were eroded by diminishing traditional resources and VAT-based resource was effected by the weak economic growth. In 1984 the maximum contribution rate rose to 1.4% as a temporary measure, a fundamental reform taking place in

1988. At this time it was introduced a new resource based on gross national product of Member States while national contributions ceiling was 1.15%. It increased in 1992 to 1.20%, in 1993 to 1.27%, by 2010 to 1.24%, and in recent years of the multiannual financial framework to 1.23%. [Stephane Saurel, 2010, p. 161]

The last commission's final decision on own resources is dating from June 7, 2007, with effect from 2009 and applies retroactively from 2007. Under it, the EU budget revenues' structure is as follows:

I. The EU own revenues can be defined as revenues collected by the EU to finance its budget without any influence of the national authorities. They come from three sources, as follows:

a. Traditional own income (VPT) are composed of duties on extra EU imports and sugar levies. [Council Decision 2007/436/EC] According to Article 2, paragraph (1), letter (a) of Decision 2007/436/EC, there is no difference between agricultural duties and customs duties. These revenues are collected by Member States on behalf of the European Union. Since 2001 a rate of 25% of such revenues are retained by the European institutions to cover operational costs, the percentage was increased from 10% to 25% by Council Decision 2000/597/EC. Traditional revenues are monthly available to the Commission until the first working day following the 19th of the month following that for which it pays. Any delay is sanctioned by a payment of interest. Member States are examined every three for collecting these resources according to European legislation. The latest report identified 436 deficiencies, of which 224 had financial implications. [The Sixth European Commission Report, 2010, p. 2]

b. VAT-based own resources (VAT) is formed by applying a fixed percentage to the harmonized tax base and is received by EU governments. It was introduced in 1970 because the traditional revenues were not sufficient. To prevent disparities between Member States where consumption is higher, and therefore VAT collected is high, it was established that the basis for applying the VAT should not exceed 50% of the GNI of each Member State. This percentage was initially 55% between 1988-1994, but was gradually reduced so that since 1999 the limit is 50% under Council Decision 94/728/EC of 13 October 1994. In 2009, the ceiling of 50% was applied for 12 Member States, namely Bulgaria, Czech Republic, Estonia, Ireland, Greece, Spain, Cyprus, Luxembourg, Malta, Poland, Portugal and Slovenia. [European Commission, 2010, p.60] The percentage applied to the harmonized VAT in each Member State is 0.3% since 2007, with exceptions between 2007-2013 for Austria 0.225%, Germany 0.15%, the Netherlands and Sweden 0.10%. [Council Decision 2007/436/CE] The rate of 0.3% was not always applied. It was started at a rate of 1% between 1974 and 1979 and 1.4% in 1985. It gradually decreased to 0.3%. [European Commission, 2008, p. 240] The basic steps for determining the VAT-based resource require calculating total net VAT revenue collected by the Member States, dividing it by the weighted average rate of VAT (if the Member State has more than one VAT rate) for determining the intermediate tax base, then adjust it with positive and negative compensation to get the harmonized VAT and apply the percentage set by the EU. Weighted average rate of VAT is calculated according to ESA95 by national statistical institutes.

c. Gross National Income – based own resources (GNI) is obtained by applying a fixed percentage to gross national income value of each Member State. They are designed to bring equity between Member States so that each country contributes proportional to their wealth. In 2007-2013 the Netherlands and Sweden pay less GNI-based revenue. At national level, each Member State shall determine GNI under ESA95 rules, they are checked by Eurostat and the GNI Department. The values are submitted to the Commission for calculating GNI-based contributions. According to latest estimates, the GNI for 2012 is set at 13,114,511 million € in current prices for EU-27, 12,650,080 million € for 2011 and 12,218,528 million € for 2010. [EU Draft General Budget for 2012, 2011] Gross national income reached 11,626,995 million € in 2009, 12,312,555 million € in 2008 and 12,243,045 million € in 2007. GNI rate applied to determine the contribution of each Member State in 1995 was 0.339%, 0.534% in 1999, 0.7072% in 2009 and 0.7894% in 2010.

II. Other revenues includes revenues collected from people employed by the European institutions (taxes withheld from wages, temporary contributions from wages, special taxes on salaries, contributions to pension systems, etc.), revenue from administrative operations of the European institutions (sales of goods, real estate, income from publications, rental income, income from investments), payments of some non-EU countries to finance joint programs (EFTA contributions, Schengen contributions, refunds of unused Community aid, cooperation with third world states, etc.), interest on late payments (competition infringement fines, penalties for not paying on time national contributions) and other income. These revenues are added to the previous financial year surplus. It must be added that revenues, which are based on VAT and GNI, are calculated using preliminary estimates of

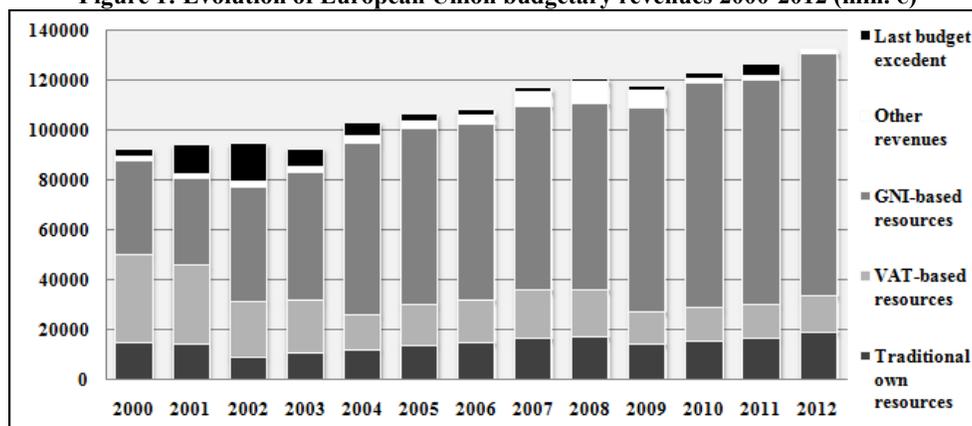
VAT and GNI that exist in the EU budget preparation. These predictions are then corrected through amendments to the Community budget, so that Member States benefit of adjustments, the final amounts are valid only after budget execution. Thus, each year Member States submit by the end of April the VAT and GNI forecasts for next year. Until July 31 they have to submit VAT base for the last year and up to September 22 the GNI for the last year. [Council Regulation no. 105, 2009]

Member States are responsible for collecting and making available to the EU's traditional own revenues, calculating VAT and GNI base and their contributions. The Commission shall establish the actual payments, the rebate for Great Britain, prepare budget and control the Member States. Late payment interest for unpaid contributions to the EU is differentiated according to country's membership to euro area or not. Thus, the interest rate paid by euro area countries for delays is the refinancing interest rate of the European Central Bank used in the first day of that month plus 2 percent. In other cases the rate is equivalent to the interest rate of the first day of that month plus 2 percentage points. [Council Regulation no. 1150/2000] More over, in both cases the interest increase by 0.25 percentage points for each month of delay.

III. National compensation mechanism applies because it was found that in the previous years certain European countries have payed to the EU budget more than others, so they ordered a series of corrective measures to compensate for inequality for the UK (correction for the UK, i.e. UK receives 66% of the difference between its contribution to EU budget revenue and money received by European programs, on the expenditure side) [European Commission, 1998], lump sum payments for the Netherlands and Sweden, but also reduced rates of VAT-based contribution for the Netherlands, Sweden, Germany and Austria. The fact that the EU budget does not collect these corrections, translates into a cost that is incurred by the other 26 member states in proportion to their contributions based on GNI. However, Germany, Netherlands, Austria and Sweden have found that their contribution is too high, so there is a limit of 25% of the amounts which would have had to pay as corrections for Great Britain, and the difference is supported by other 22 Member States since 2002. The first correction mechanism was established in Dublin in 1975, but was never applied. Current mechanism was established in 1984 with effect from 1985. But changes in the EU have led to the appearance and other countries faced with inequities. Any Member State which confront with excessive budgetary burden is entitled to correction. The current method of calculation was introduced by the Council of Fontainebleau in 1984. After 20 years EU enlargement, the EU budget has changed. The operating conditions for the UK correction mechanism have changed too. So in 2004 the Commission proposed a new mechanism of corrections, but more general, which starts from the balance recorded by each country with the EU budget. [European commission, 2004] This kind of mechanism should be applied when it exceeds a threshold percentage of GNI, in which case the corrections should be applied and partial reimbursement of amounts that exceed that threshold, too. Also, it was proposed capping the total volume of corrections. The idea is to make it easier and more transparent. Such a mechanism leads to the reduction of negative budgetary balances, it reduce the gap between the amounts paid to the EU budget and the amounts received by them. The Commission recognizes that the mechanism is an imperfect one.

The budget of the European Union is based 99% on own resources and 1% on other revenue and it accomplish **the golden rule** of budget balance. The existence of a deficit is an exceptional fact, there was only 3 times so far in 1977, 1984 and 1986. In case of a deficit, it is financed by increasing the GNI contribution. European resources are subject to a cap of 1.23% percentage of gross national income of the Member States. Dynamic analysis of European revenues after 2000 indicates an increasing trend in the value of financial resources available to the EU of € 92.7 billion in 2000. They reached 117.6 million € in 2009 as budget execution. It identifies two periods of decline in 2003 of -2.1% and in 2009 of -3.3%. Over the past 12 years European own resources has grown on average by 3.1%. The EU budget for 2011 provided to the Commission 126.5 billion €, 2.9% more than the previous year 2010.

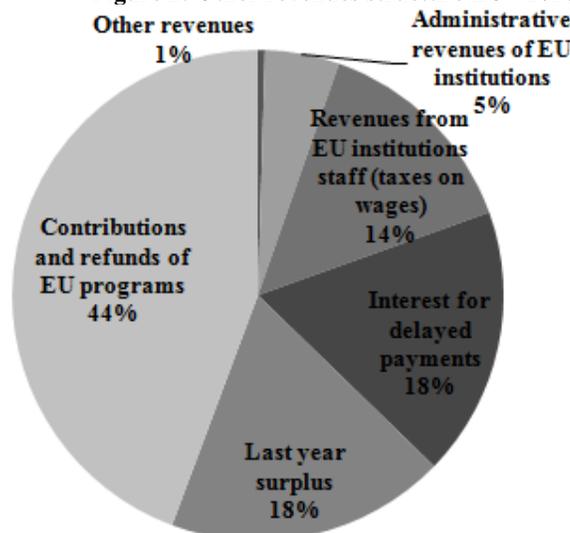
Figure 1: Evolution of European Union budgetary revenues 2000-2012 (mln. €)



Source: European Union budget executives - Financial Report 2009, Draft Budget 2010-2012

Traditional own resources experienced a reduction in their share from 29.1% in 1988 to 16% in 1998 due to trade liberalization. The 2012 European budget is built with a 14.5% share of these revenues. Another structural change occurred in the area of resource based on VAT, their share have reduced from 70% in 1990 to 35.7% in 1997 and 11% according to the draft budget for 2012. Basically in 1988 it was decided to limit revenue from VAT to 55% of GNP, but in 1995 it was subsequently reduced to 50%. In 1990 VAT-based resource was the most important source of financial revenues to the EU budget. It had a share of 60.4%. The second position belongs to traditional own resources accounting for 29%, followed by other revenues accounted for 6.2%. GNI-based resource, accounting for 4.2%, occupies the last position. From 1990 to present EU budget revenue structure has changed.

Figure 2: Other revenues structure EU - 2010

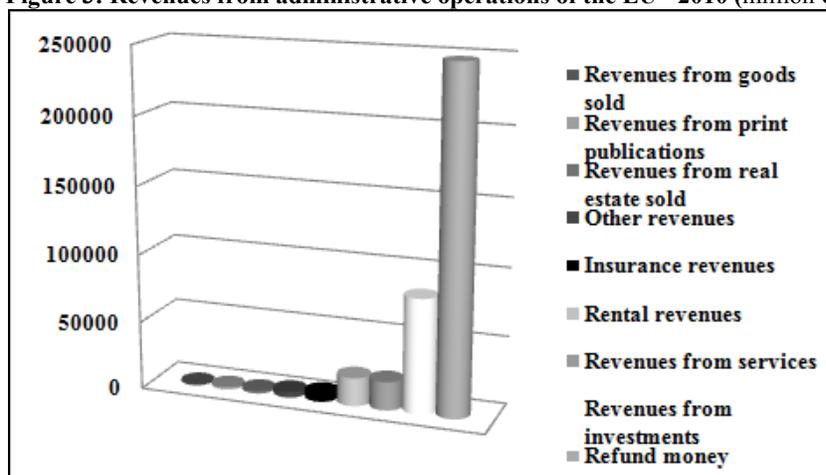


Source: 2010 the EU budget execution in 2012 EU budget draft

Structural analysis of European revenues reflects a change in the composition of the EU budget revenues during the 12 years analyzed. Currently EU's most important resource is based on GNI. In 2010 it has a share of 73.42%. If we consider the year 2000 when GNI-based resources hold a share of 40.53% we can say that the EU has dropped to finance its programs due to VAT-based resources. GNI-based resource has grown on an average of 8.9% over the past 12 years. VAT-based resource has seen a steep decline in the share of total revenues from 37.95% in 2000 to 10.89% in 2011. In terms of value, it decreased by 5.5% annually, so that it records 13.8 billion € in 2011, less than half of the year 2000 35.2

billion €. Although they have an insignificant share of less than 1% of total European revenues, other revenues of the EU budget saw increases of up to 60% in 2008. The EU budget for 2011 provides a value of 1,421.4 million € for other revenues.

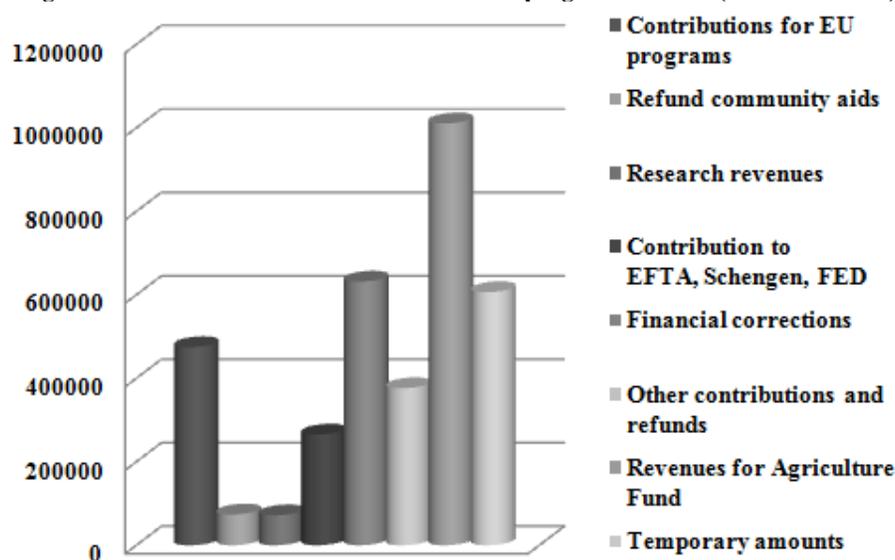
Figure 3: Revenues from administrative operations of the EU - 2010 (million €)



Source: Data processed from the EU budgetary executions, EU budget draft for 2012

According to the draft budget for 2012, total revenues reach a value of 132.738.712.588 €, with 4.89% more than in 2011. The percentage rate applied to VAT harmonized base is 0.30% and 0.709% to GNI base (0.7535% for 2011). The most important own revenues of EU budget is GNI-based resource (73.29%), followed by traditional own resources (14.54%) and VAT-based resources (10.92%). The chart shows that the annual financial surplus had not a constant evolution. Unused money of the EU budget report next year, such as can be seen in 2003, the 2002 surplus fund 15.72% of revenues, in 2009 it financed only 1.26% of revenues.

Figure 4: Revenues from contributions to EU's programs in 2010 (thousands euro)

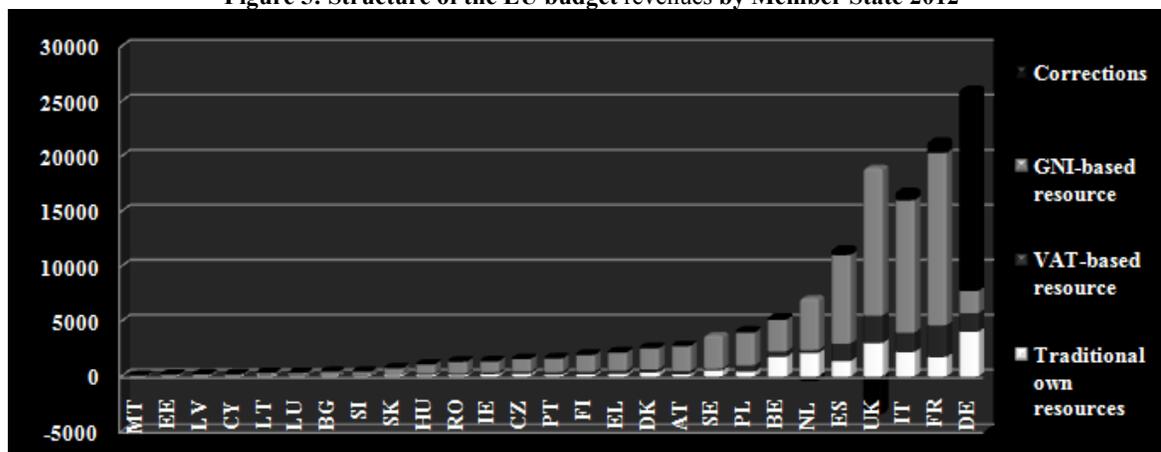


Source: Data processed from the EU budget exucutions, EU Draft budget for 2012

Structural analysis of other European revenues for 2010 indicates that repayments and external contributions to finance common programs have the largest share amounting to € 3.5 billion, where payments for Agriculture Fund and financial corrections are most important. With a value of 1.4 million €, interest on late payments have a share of 18%, of which 0.2 billion € are penalties for Member States. In 2010 revenue from administrative operations of the European institutions have registered a value of

388 million €, of which the most significant amounts are reimbursements and investment income. The category of other revenues are collected from the European community's employees worth 1.12 billion € in 2010.

Figure 5: Structure of the EU budget revenues by Member State 2012



Source: Data processed from EU budget draft for 2012

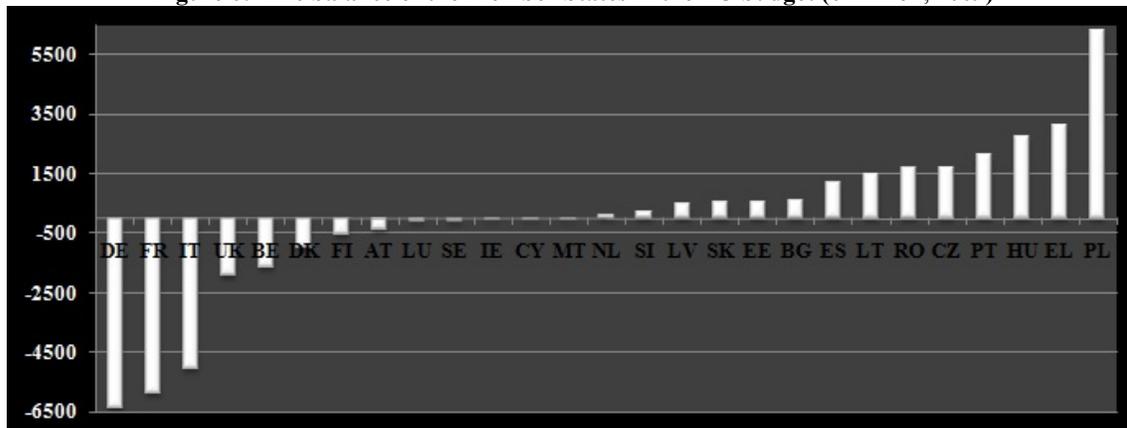
The Member States have an uneven participation to the EU revenues. Thus, the largest contributor to the own resources system is Germany, accounting for 19.8% in 2012, followed by France with 17.64%, UK 10.99% and Italy 13.14%. At the end of the top is Malta 0.05%, Estonia 0.13%, Latvia and Cyprus 0.16%. [2012 EU budget draft, 2011] According to the EU budget draft for 2012, Romania's national contribution to EU budget is 1.398 million €, i.e. 1.14% of total revenues. Romania occupies the 16th position among the Member States with the largest payments. As can be seen in the table, Romania's contribution to EU increased gradually from 1,089.4 million € in 2007 to 1313.2 million € according to the 2010 budget.

Table 1: Romania's contribution to the EU budget 2007-2012

Type of revenue (mln. €)	2012*	2011*	2010*	2009	2008	2007
Sugar levies	1	1	1	1.2	56	39.2
Custom duties	120.9	142.3	152.4	164.5	210.5	173
Cost of collection (-25%)	40.6	47.7	51.1	41.4	66.6	53.1
<i>Traditional own resources</i>	<i>121.9</i>	<i>143.3</i>	<i>153.4</i>	<i>124.3</i>	<i>199.9</i>	<i>159.2</i>
VAT-based resources	155.3	145.3	148.7	156.6	168.5	162.1
GNI-based resources	1044.4	964.6	1026.7	901.8	741.1	681.7
UK Correction	67.2	51.5	70.6	89.7	108.1	86.4
Other corrections	9.0	8.5	8.9	70.1	0.08	0.0
<i>Total contribuții naționale</i>	<i>1276</i>	<i>1169.9</i>	<i>1254.8</i>	<i>1218</i>	<i>1017.7</i>	<i>930.3</i>
<i>Total venituri proprii</i>	<i>1397.9</i>	<i>1313.2</i>	<i>1408.2</i>	<i>1342.3</i>	<i>1217.6</i>	<i>1089.4</i>

Source: EU Budget executions 2007-2009, annexes to Financial report of EU budget 2009, EU Draft budget 2010-2012

Operational budget balance for each Member State refers to the difference between the amounts paid by each Member State to EU budget and the amounts available to each Member State as Community programs.

Figure 6: The balance of the Member States in the EU budget (€ million, 2009)

Source: EU budget – Financial report 2009

In the figure no. 6, 12 of 27 Member State recorded a negative balance in relation with the EU budget. Germany is the country that contributed to the EU budget with 6.36 million € more than European expenditure in its favor, followed by France with a negative balance of 5.9 million € and Italy with 5.06 million €. In contrast we find some countries that receive more EU funds than they pay. In 2009 Poland has positive balance of 6.3 million €, followed by Greece with 3.1 million € and Hungary with 2.7 million €. From this perspective, since accession to the present, Romania has recorded a positive balance of € 1.692.5 million in 2009, € 1581 million in 2008, ie € 595.8 million in 2007. [EU budget 2009 Financial Report, 2010, p. 86]

3. Features of the current EU resources system

EU budget differs from other international organizations because it has own financial resources. Revenues are provided by Member States, and they can not intervene to decide on them. Funding under the Community's own resources system is made since 1975 in full accordance with procedures defined at Community level, without any direct intervention of the Member States. Since EU budget depends on national transfers, it competes with national budgetary policies. It is impossible to satisfy all these requirements by own resources, but a combination of several categories of resources would better meet the criteria of evaluation system. The European funding is overshadowed by opacity and complexity. [European Commission, 2008, p. 145] It has grown to become increasingly more complex. Opacity is given by the fact that there is a lack of transparency in the calculation of the VAT-based revenue, that revenue for GNI-based are statistical calculations, to which it is added the existence of various corrections. The two largest sources of revenue – the VAT- and GNI-based own resources – display many of the characteristics of national contributions and are often perceived as such. They are provided by national Treasuries and are sometimes presented as an expenditure item in national budgets. This inevitably creates a tension which poisons every EU budget debate. [Commission Staff Working Paper, 2011] European taxpayers face difficulty in identifying how much they pay for Europe, especially where there is not a direct correlation between amounts collected and the purpose of them because of the principle of non-affected revenues. As a result, it is almost impossible for EU citizens to ascertain who effectively bears the cost of financing the EU. Issues arise, in particular regarding the VAT-based own resource. Furthermore, the EU budget is often presented as "an insatiable and very costly Leviathan, sucking national resources to finance useless, or even harmful policies that benefit a few well-organized lobbies of producers – but when it comes to how much it actually levies on individual taxpayers, the amount quoted are usually grossly exaggerated". [Begg, I., Enderlein, H., Le Cacheux, J. and M. Mrak, 2008] Another feature is that the justification for allocating 25% as "collection costs" for traditional own resources is weak. While the 10% retained until 2000 could reasonably be considered to be compensation for expenses incurred by Member States.

The objective to remove the complexity and to increase simplicity of the community revenues can be achieved by applying a simple system based on Member States contributions, such as GNI-based revenues. A possible solution is providing decisional competence on European revenue policy of the European Parliament because it does not have competences on EU budget own revenues. Or another option would be rethinking the structure of European revenues to increase direct revenue ratio by

introducing one or more taxes or other resources paid directly by European taxpayers for the EU. There are many variations in this respect, such as resources taken on the turnover and corporate profits, tax on energy consumption and pollution, taxes on transport and roads, excise duty on alcohol and tobacco, taxes on telephone communications, SMS, e-mail, instant messaging. Current revenues' system is stable and has sufficient resources, but does not meet the visibility and simplicity, nor contribute to more efficient allocation of economic resources within the EU. Many people do not know what they pay to the EU budget. But untransparent is correction mechanism, too. European Commission admitted in its reports that the revenue system is not enough transparent for Europeans, but also balancing the need to reform technology. [European Commission, 2004]

4. Alternative sources of financing the EU after 2014

The availability of financial resources is quite limited, the traditional own resources decreased because of trade liberalization and constraints of the VAT-based revenues. The EU must find new sources of funding. This requirement results from a continuous growth of costs to implement new policies. As always, before completing 3 years of previous financial framework is proposed a new framework. So, at the end of June 2011 was released a multiannual financial framework project for 2014-2020 and a series of documents on the European Union's own resources system's reform. [European Commission, 2011] According to the Commission communication to the Parliament, it agrees that the own resources system is expired and must be reformed, to give up a budget which is dominated by contributions based on GNI. [European Commission, 2011] This type of budget dilutes common European interest and ignores the European added value. Commission reinforces the idea that over 85% of European revenues are based on aggregate statistics derived from VAT and GNI which leads to the behavior of Member States to request reimbursements. The Commission proposes new resources to implement the principles of autonomy, transparency and fairness. These new resources do not give fiscal sovereignty and do not increase in the contributory burden of Member States. Thus it was proposed a list of possible EU budget financing solutions that can gradually replace national contributions, from which it was decided to propose a financial transactions tax (FTT) and a new resource based on VAT.

A different direction followed by the Commission for 2014-2020 aims to simplify the corrections mechanism. The Commission proposes a new corrections' mechanism based on the gross payment discounts from GNI-based resource, replacing the existing mechanism from 1 January 2014. The same draft decision also proposed the inclusion of temporary correction in the favor of Germany (2500 million €), Netherlands (1050 million €), Sweden (350 million €) and Britain (3600 million €) during the new multiannual financial framework. [Council Regulation, 2011] Reforming the EU resources system does not refer to a change in the size of EU budget revenue figures, but rather changing the structure, the mix of own revenues. But it must not fall into the other extreme when a combination of many small resources leads to the complexity of financing. The new financial system proposed by the Commission allows preservation of elements of the previous system, namely traditional own revenues and GNI-based resource in order to reduce its share in total revenues. [European Commission, 2011] As regards traditional own resources, proposed to reduce the cost of collection, retained by Member States, from 25% to 10% as it was in 2000. The Commission proposal aims to eliminate the VAT-based resource from December 31, 2013 in parallel with the introduction of new own resources and a retroactive application. The criticism of the VAT-based resource is that the value, to which it is constituted, is a statistical construction, has no connection with the *acquis*, leads to difficulties in auditing and does not have autonomy.

First own resource proposed by the Commission is the one resulted from **financial transactions taxation (FTT)**. It refers to a tax calculated by applying a percentage to the gross volume of financial transactions. Financial transactions mean transactions in shares, bonds, derivatives and other transactions. It was discussed its application to the volume of the central banks monetary transactions. Commission is proposing to apply a variable rate between 0.01% -0.5% depending on the transaction. It covers financial companies, investment companies, brokerage firms, insurance, pension funds that trade. The advantages of FTT are the facts that it highlights a corrective role of financial markets and it unifies financial operations taxation techniques in the Member States. The second proposed resource is *a new resource based on VAT*. The latest date for introduction should be January 1, 2018. Basically, it substitutes current statistical calculation method of harmonized VAT base. This resource requires application of a VAT rate of more than 2 percent on the value of intra-community transactions and imports of goods and services. Proposed new VAT rate is a combined rate between the national standard rate and European rate.

Member States shall collect the national VAT and the European VAT, which is transferred to the EU budget. To meet criteria of transparency, it will have passed on bills both VAT rates. The existence of two VAT rates will determine the European taxpayer to keep two separate accounts, two separate statements. The question that arises is to determine the rate of VAT that would be applied to EU level. They proposed two alternatives. The first option is to apply a differential rate by category of goods and services. For example, if property is subject to 0% VAT in the Member States, the EU will maintain the same rate. The second way is to apply the same VAT rate for all transacted goods. Applying a rate of 1% on sales / purchases of goods and services and imports taxable by a VAT standard rate would result revenues of approximately 50.4 billion (2009). [European Commission, 2011]

This replacement can be done by directing a percentage of the national VAT rate to the EU budget. For example, if Romania has a standard VAT rate of 24%, then 22% will finance the state budget and 2% the EU budget so that the tax burden of taxpayers remain the same. And to meet the criterion of visibility and transparency they should be presented separately in product prices in the store without separate legal entities to keep records of the two types of VAT, adjustment to the EU budget should be done centrally. It is true that inaccuracies may occur in setting a unique rate of VAT considering 27 values of VAT rates in the 27 Member States and the existence of many reduced VAT rates. But, applying the same percentage in the EU is not relevant because 2% of the 15% VAT rate in Malta is not the same as 2% of 25% VAT rate in Denmark. One possibility is directing a uniform percentage of each standard rate of VAT, i.e. 15% of VAT rate of each state should finance the EU budget (15% x 24%). One of the implications of this fundamental change is harmonizing VAT in Europe, so the VAT Directive should be amended in this respect. Without amending VAT Directives, the new resource based on VAT is difficult to implement. In addition to these implications it is required to taxpayers to keep a separate record of VAT rates, separate fullfill forms, cost for program changes.

In the category of alternative funding sources could be found the following:

a. Financial activities tax (FAT) is inspired by the IMF proposals on financial sector taxation. IMF proposed that this tax should apply on financial institutions' profit. It was proposed in three variants of calculation. The additive method of cash inflows and cash outflows was the most appreciated. This tax appears as a new form of taxation on financial companies. This tax is considered unaplicable because it makes some differences between financial companies and quasi-financial companies. It is not in correlation with taxes paid by European banks for the systematic hedge and is accompanied by higher costs of collection. This resource may have implications in terms of limiting the financial market, it discourages financial investment, it creates discrepancies between companies in the financial sector and other sectors, it increases the tax burden.

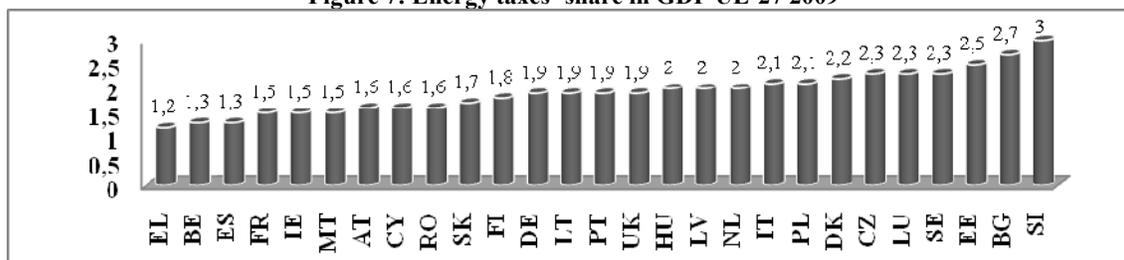
b. Revenues from auctions of pollution rights in the EU trading system These are part of the EU policy against climate changes and to reduce the gases emitted by industry. This resource requires a transfer of revenues from auctioning of the Member States to the EU budget. Another option proposed was a centralized collection of these revenues to the Commission so that a portion of revenues to remain in the European budget, and some to be transferred to the Member States. We think that this is not a viable solution because it limits the fulfillment of EU policy steps to fight against climate changes, it is basically a change of revenues destination.

c. Air transport revenues This idea arose from the fact that Member States have started to introduce a tax on airline tickets, especially since aviation has two tax breaks: no excise duty on kerosene and no VAT on airline tickets. This possible source of income is based on some practical variations: starting fee and flight tax. Starting fee may be paid by passengers flying from a European airport and may vary by distance and flight class. Flight fee would be imposed on airlines for each flight, and may vary depending on the characteristics of the aircraft and destination distance. The collection has been proposed either at national or central level. The weakness of this type of resource is that it affect low-cost companies and increases the risk of relocation of aviation companies in neighboring countries for flights Asia-America, in order to avoid the European community airspace.

d. European tax on energy Since harmonization is achieved for energy products too, a first draft to expand the resources' system by introducing new energy-related resources as a tax on consumption of petrol, diesel, gas, LPG, differentiated according to product and how they use energy, exempt domestic consumption. Very attractive is fuel consumption for road transport and aviation. Such a resource can rely on the minimum excise duty laid down at European level. It is a method of internalizing the social and economic costs of climate changes and other negative environmental effects. I do not think that would be of high complexity and I appreciate that it presents the greatest opportunity on medium term.

In 2009 the tax burden for environment supported by European taxpayers reached 2.4% of EU GDP, with extreme values for Denmark 4.8% of GDP to 1.6% of GDP in Estonia. Bulgaria shows that environmental taxes have a share of 10.5% in total tax revenues, while only 4.7% in Estonia. The European average stands at 6.3%. Tax revenues from energy consumption are estimated to represent 4.7% of total tax revenues of Member States in 2009 and only 1.8% of GDP. I think that it presents a viable source of own resources for EU budget.

Figure 7: Energy taxes' share in GDP UE-27 2009



Source: European Commission, Taxation trends in the European Union 2011

In terms of transport fuel taxation in the EU, the statistics show that on average 1.4% of EU GDP is taken in the Member States, i.e. the source has brought 3.7% of EU-tax revenue of 2009. Energy taxation is not a current issue, there is a European directive governing the taxation of energy, although its purpose is not to raise European public resources, but to limit the use of the resource base. Since 2004, the Commission proposed to tax fuel used for road transport. This resource is proposed as an alternative energy tax and a tax on CO₂. Energy tax involves the application of a flat tax at EU level given the amount of energy consumption in the Member States, and revenue collection to achieve centralized EU. CO₂ tax on transfer to the EU budget requires tax CO₂ emissions beyond the limits set at European level. In terms of fuel taxation in favor of the European Union can be achieved by transferring a portion of excise levied on the national level, the harmonization of excise duties for the 27 Member States. Since today, fuel excises are an important revenue source at the national, its application to the Community level is twofold: either additional quota for the EU or the Member States transfer some of proceeds. Whatever it is, the implications are felt through an increased taxpayer's cost of living.

e. European tax on company profits (EUCIT) A resource based on the profit made by European companies is viable in terms of harmonization of tax base calculation. Currently there are 27 different tax systems and consolidation/harmonization of tax base is not easy. Such a resource may consist of a minimum tax determined according to the harmonized taxable base at EU level. Income taxes are among the main sources of revenues of the Member States. Corporate tax rates in the EU ranges from 10% in Bulgaria and 35% in Malta. [European Commission, 2011] Tax revenue from income taxes have a share of 1.9% in EU GDP in 2009, ranging from 0.7% of GDP in Germany and 6.7% of GDP in Malta. There are huge discrepancies between Malta which funds its budget with 19.6% by income taxes and Germany with 1.7% of total tax revenue. Corporate income tax is seen as a viable solution because it shows consistency with the logic of a single market in which European companies operate. [Alain Lamassoure, 2007] From our point of view is an unlikely source that involves political and administrative efforts and a long time horizon. To become reality it requires a common EU-wide taxable income and common rules to be followed by all companies. The complexity of this income is given by harmonizing the tax base in the 27 Member States and it is a threat to national fiscal sovereignty. Another implication is that it faces two control authorities when applying the two rates, a national one and a European one.

5. Conclusions

The need for reviewing European own resources' system is inevitable for expanding funding opportunities: creating new revenues and changing the methodology for calculating the corrections. Last amendment of the European system of revenues was realized in 1999 that led to a gradual decrease in VAT based resource for total revenues and a gradual increase of GNI resource. It is necessary to change the structure, not an increase in tax burden and population consumption tax permits all these. However, a direct tax affects taxpayers more quickly. Creating a European tax is certainly a political issue. The principle of legitimacy of a European tax excludes the specific powers of the European Union. Such an evolution of the financial resources means finding an agreement on sharing the role of national

parliaments and European Parliament. An European tax involves an attack on Member States' fiscal sovereignty. A European tax collected by each Member State can be justified by the fact that it gives a sense of European identity. [Whatever approach is followed, it is accompanied by a series of technical problems that can be overcome only by participation of political classes. The EU funding is a source of conflict between Member States. Any decision for additional funding to the EU budget attracts pros and cons, it leads to critical political debate to decide which feature of own resource system is more important and what the decision must be made.

The Commission proposes the creation of two new own resources based, respectively, on a part of the proceeds of a Financial Transaction Tax (FTT) and the national VAT receipts. First, a directive on the EU FTT has been proposed on 28 September 2011 to make sure that the financial sector makes a fair contribution to public finances. The FTT will apply on the territories of the 27 Member States. But it will not concern transactions involving private households or small and medium enterprises such as house mortgages, bank borrowing by SMEs, or insurance contracts. Proposing new own resources does not mean increasing the size of the EU budget. The progressive introduction of new resources opens the door for other resources to be reduced, phased-out or dropped. As a result, Member States' contributions to the EU budget will diminish. The Member States will have an additional degree of freedom in managing scarce national resources. Introducing new own resources "is not an argument about the size of the budget – it is a debate about the right mix of resources". [Algirdas Šemeta, 2011] The proposed new own resource would consist in a single rate. It will be applied on all the goods and services currently subject to standard rate VAT in every EU Member States. The tax base would correspond to the smallest common denominator of national VAT systems. This would mean that a supply subject to national VAT at the standard rate in a Member State would be subject to the new VAT own resource unless the same supply is subject to a reduced rate or an exemption in another Member State. In practice, tax administrations would regularly transfer a share, corresponding to such a rate, of the VAT receipts collected and stemming for transactions subject to the standard rate.

6. Acknowledgements

The research is conducted under project POSDRU/88/1.5/S/60370 co-funded by European Social Fund through the Sectoral Operational Programme - Human Resources Development 2007-2013 (SOP HRD).

7. References

- Alain Lamassoure (2007): *Public money of Europe. What control?*, Robert Schuman Foundation, Paris, 2007
- Begg, I., Enderlein, H., Le Cacheux, J. and M. MRAK (2008): *Financing of the European Union Budget*, Study for the European Commission, Directorate General for Budget (contract N ° 30-EC -0122101/00-72, 29 April.
- Commission report to the European Parliament and Council (2010): the Sixth Report of the Commission on the inspection of traditional own resources, 2006-2009, Brussels
- Council Regulation (2011): *Laying Down Measures for Implementing the system of own resources of the European Union*, Brussels, 06.29.2011, COM (2011) 511
- Council Regulation no. 105/26 January 2009 amending Regulation no. 1150/2000 implementing Decision 2000/597/EC, Euratom on the system of the Communities' own resources
Council Regulation no. 1150/22 May 2000 to implement Commission Decision no. 436/2007 on EU own resources
- European Commission (2011): *Taxation trends in the European Union 2011*, Luxembourg
- European Commission (1998): *Financing the European Union - Commission Report on the Own Resources System*, 7 October, Brussels
- European Commission (2004): *Financing the European Union- Report on the functioning of the own resources system*, July 14, COM/2004/0505 final
- European Commission (2008): *European Union Public Finance*, 4th Edition, Office of Official Publications of the the European Communities, Luxembourg
- European Commission (2010): *EU Budget 2009 Financial Report*, Publications Office of the European Union, Luxembourg
- European Commission (2010): *European Union budget in brief*, Office for Official Publications of the European Union, Luxembourg

- European Commission (2011): *A budget for 2020*, Communication from the Commission to Parliament and Council, Brussels, 29 June, COM (2011) 500 final, Part I.
- European Commission (2011): *Commission staff working paper financing the budget I*: Report on the operation of the own resources system Document Accompanying the Proposal for a Council Decision on the system of own resources of the European Union Brussels, 27.10.2011 SEC (2011) 876 final / 2
- European Commission (2011): *Commission Staff Working Paper I - Financing The Budget: Report On The Operation Of The Own Resources System Document*, Accompanying the Proposal for a Council Decision on the system of own resources of the European Union, Brussels, 29.06.2011 SEC (2011) 876 final
- European Union (2011): *Draft General Budget of the European Union for the Financial Year 2012 General Statement of Revenue*, June 15, Brussels
- Jacques Buisson (2009): *Public Finance*, 14th Edition, Ed Dalloz, Paris
- Saurel Stephane (2010): *Le budget de l'Union Europeenne*, Direction d'information et administrative law, Paris
- Yves Terrasse (1991): *The European Community budget*, Masson Publishing, Paris

APPLICATION OF THE PRINCIPAL COMPONENTS ANALYSIS TECHNIQUE ON ROMANIAN INSURANCE MARKET

BURCĂ Ana-Maria

Ph. D. Student, Faculty of Finance, Insurance, Banking and Stock Exchange, Academy of Economic Studies, Bucharest, Romania, burca.anamaria@yahoo.com

ARMEANU Dan

Ph. D. Professor, Faculty of Finance, Insurance, Banking and Stock Exchange, Academy of Economic Studies, Bucharest, Romania, darmeanu@yahoo.com

Abstract: *Principal components analysis (PCA) represents a mathematical algorithm that reduces the dimensionality of the data while retaining most of the variation in the data set, by identifying directions, called principal components, along which the variation in the data is maximal. Nowadays, PCA is widely used in all forms of analysis due to its simplicity and its capacity of extracting relevant information from confusing data sets. In this paper, we will apply the PCA to determine the financial strength of the insurance companies that operated on the Romanian market in 2010, taking into consideration the deteriorating conditions of the economic environment.*

Key words: insurance, causal space, principal components, variance.

JEL classification: C 21, G 22

1. Introduction

Principal components analysis (PCA) represents a mathematical algorithm that reduces the dimensionality of the data while retaining most of the variation in the data set, by identifying directions, called principal components, along which the variation in the data is maximal. This data analysis technique was first described by Karl Pearson (1901), although he did not propose a practical method of calculation for more than two or three variables. A description of practical computing methods was much later designed by Hotelling (1933). This non-parametric technique, considered one of the most valuable results from applied linear algebra, achieved widespread use when electronic computers became wide available. Therefore, along the years, PCA has been extensively covered in the literature (e.g., Jolliffe, 2002; Cichocki and Amari, 2002; Bishop, 2006; Ilin and Raiko, 2010). Nowadays, principal components analysis is widely used in all forms of analysis – from neuroscience to computer graphics – due to its simplicity and its capacity of extracting relevant information from confusing data sets.

In many analysis applications of economic nature is raised the question of determining the functional correlations established between explanatory variables that assemble the initial causal space. The higher the number of variables that can be identified as causes of an effect phenomenon is, the larger the dimension of the initial causal space will be and will be even more difficult to analyze this space. In cases with a large number of explanatory variables, in addition to difficulties in obtaining information and the inherent complexity of computations, there is a risk of the initial variables being inter-correlated, which drastically reduces their significance. Furthermore, we cannot clearly visualize the causal relationships of the initial space and we cannot highlight the contribution of each variable to the creation of the initial causal space's variance.

Principal components analysis provides solutions to the above issues by reducing the initial causal space with a large number of variables to an equivalent sub-space of a lower dimension, while retaining most of the variance in the data set. Technically, a principal component can be defined as a linear combination of optimally-weighted observed variables. The first component extracted accounts for a maximal amount of total variance in the observed variables. The remaining components that are extracted in the analysis share two vital characteristics: each component accounts for a maximal amount of variance in the observed variables that was not accounted for by the preceding components, and is uncorrelated with all of the preceding components. Thus, each new component accounts for progressively smaller and smaller amounts of variance. The lack of correlation is a useful property because it means that the principal components are measuring different dimensions in the data. The best results are obtained when the original variables are very highly correlated, positively or negatively. Finally, the resulting components will display varying degrees of correlation with the observed variables, but are completely uncorrelated with one another.

2. Application of the PCA technique

In this paper, we will apply the PCA method to determine the financial strength of the insurance companies that operated on the Romanian market in 2010, taking into consideration the deteriorating conditions of the economic environment. In our framework, we have selected a number of nine variables which are highly relevant for the insurance market: gross written premiums, gross claims paid, net premium reserves, net mathematical reserves, net income, share capital, gross written premiums ceded in reinsurance, other net reserves and total assets.

Table 1: The mean and standard deviation for each variable

Variable	Mean	Standard deviation
1. Gr wri pre	193148887	296245218
2. Gr cl paid	117894969	211873479
3. Net pre res	76505301	135050501
4. Net m res	81022805	264665987
5. Net income	-962075	20159120
6. Share cap	97100216	180124399
7. Gr wr pr ced	29572098	54328059
8. Other n res	13091097	23177759
9. Total assets	390827702	580001945

Source: Own calculations.

We can observe that standard deviation reaches a high level for each variable in the model, which means that there is a large quantity of information in the initial space. The high values of standard deviations can be explained by the existence of strong correlations between the original variables. This represents a good feature, taking into account the fact that the best results are obtained when the original variables are very highly correlated.

Table 2: The correlation matrix of the original variables

Variable	1	2	3	4	5	6	7	8	9
1	1.000	0.928	0.972	0.269	0.072	0.491	0.735	0.539	0.916
2	0.928	1.000	0.923	0.012	-0.172	0.583	0.840	0.385	0.811
3	0.972	0.923	1.000	0.121	0.059	0.514	0.698	0.427	0.843
4	0.269	0.012	0.121	1.000	0.398	0.027	-0.043	0.772	0.578
5	0.072	-0.172	0.059	0.398	1.000	-0.408	-0.160	0.138	0.148
6	0.491	0.583	0.514	0.027	-0.408	1.000	0.272	0.556	0.479
7	0.735	0.840	0.698	-0.043	-0.160	0.272	1.000	0.170	0.634
8	0.539	0.385	0.427	0.772	0.138	0.556	0.170	1.000	0.747
9	0.916	0.811	0.843	0.578	0.148	0.479	0.634	0.747	1.000

Source: Own calculations.

Obviously, we can see the strong correlations between the original variables (e.g. between gross written premiums and gross claims paid, between gross written premiums and total assets, between gross claims paid and net premium reserves etc.), which lead to information redundancy. Recall that we defined PCA as a variable reduction procedure that is useful when we obtained data on a certain number of variables and there is redundancy in those variables. Due to this redundancy, it is possible to reduce the observed variables into a smaller number of principal components.

Assuming the standardization of the initial data, we may now apply PCA via the correlation matrix. But we should take knowledge of the fact that only eigenvalues greater than one are of interest because only the principal components with higher variance than the standardized original variables should be evidenced.

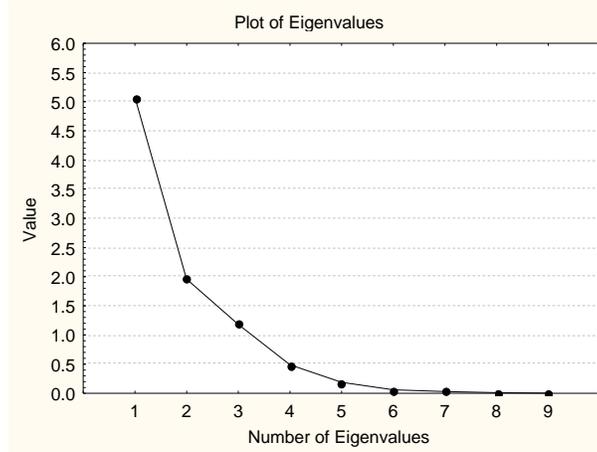
Table 3: The eigenvalues greater than one of the correlation matrix

Variable	Eigenvalue	% Total variance	Cumulative eigenvalue	Cumulative %
1	5.074726	56.38585	5.074726	56.3858
2	1.960181	21.77978	7.034907	78.1656
3	1.181000	13.12222	8.215907	91.2879

Source: Own calculations.

The plot of eigenvalues below shows that the other six eigenvalues are negligible.

Figure 1: Variation of correlation matrix eigenvalues



Source: Own elaboration.

We have retained only three principal components because the correlation matrix has three eigenvalues greater than one. They account for approximately 91% of the variability of the original space, which means that we have reduced a 9-dimensional space to a 3-dimensional space, losing only 9% of the information comprised in the former. Also, we should note that the first principal component alone explains over 56% of the variability of the original space, which means that it can be used to perform a relevant classification of the insurance companies.

Our principal components analysis continues with the determination of the factor matrix (also known as factor loadings matrix), whose elements represent the correlation coefficients between the original variables and the principal components. One common problem in principal components analysis is that the unrotated factor matrix does not often serve as a basis for sound interpretations. In order to solve this problem, we determined the rotated factor matrix.

Table 4: The rotated factor matrix

	Factor 1	Factor 2	Factor 3
Gr_wri_pre	0.936722	0.303226	0.043854
Gr_cl_paid	0.956461	0.077243	0.253089
Net_pre_res	0.939248	0.186593	0.069118
Net_m_res	0.015939	0.912378	-0.265417
Net_income	0.018716	0.309573	-0.859765
Share_cap	0.378977	0.345161	0.775677
Gr_wr_pr_ced	0.883768	-0.133203	0.066250
Other_n_res	0.279294	0.918734	0.184731
Total_assets	0.793300	0.588405	0.009611
Expl.Var	4.307058	2.388170	1.520679
Prp.Totl	0.478562	0.265352	0.168964

Source: Own calculations.

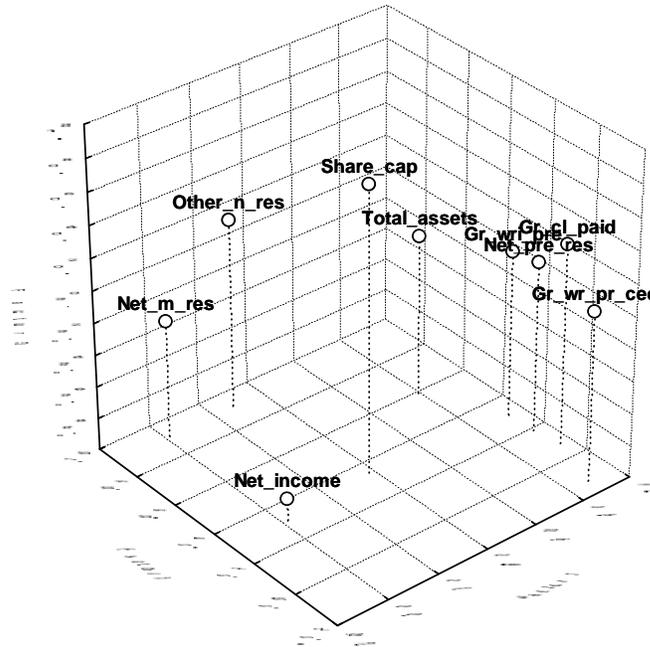
The first principal component is strongly correlated with five of the original variables (gross written premiums, gross claims paid, net premium reserves, gross written premiums ceded in reinsurance and total assets) and recovers 48% of the variability from the original space (less than 56% in the unrotated situation). The second principal component is strongly correlated with net mathematical reserves and other net reserves while the third principal component with net income and share capital. The plot below shows the correlations between the principal components and the original variables.

Figure 2: Correlation between PCs and original variables

Factor Loadings, Factor 1 vs. Factor 2 vs. Factor 3

Rotation: Varimax raw

Extraction: Principal components



Source: Own elaboration.

The principal components analysis technique also offers the advantage of emphasizing the influence of common, latent factors on the original variables. The behaviour of each original variable is determined by three types of factors: common factors which influence all the variables in a model, individual and residual factors which influence each variable in a specific manner. However, it is necessary to point out that it is difficult to distinguish between the individual and the residual factors. Therefore, the total variance of an original variable comprises of the variance explained by common (latent) factors and the variance explained by specific factors (individual and residual factors).

We can now compute the communalities for each original variable as the sum of squares of the elements on the corresponding line of the factor matrix and the specificities as “1 – Communality”.

Table 5: The specificities of the factor matrix

Variable	Communality	Specificity
Gr_wri_pre	0.971317	0.028683
Gr_cl_paid	0.984839	0.015161
Net_pre_res	0.921781	0.078219
Net_m_res	0.903135	0.096865
Net_income	0.835382	0.164618
Share_cap	0.864434	0.135566
Gr_wr_pr_ced	0.803178	0.196822
Other_n_res	0.956202	0.043798
Total_assets	0.975638	0.024362

Source: Own calculations.

As we can see from the above table, the common factors exercise a serious influence on the original variables. In all but two of the cases the communality is above 0.85, the exceptions being net

income and gross written premiums ceded in reinsurance. In the case of the net income the specific factors account for 16% of the variance due to its subjective determination, based on management decisions and stockholders' options. The indicators gross written premiums, gross claims paid and total assets possess the highest communalities, because their behaviour is more likely to be determined by general factors than by specific factors.

Earlier we defined the principal components as linear combinations of the original variables. We know that the coefficients of the standardized linear combinations are given by the normed eigenvectors of the correlation matrix.

Table 6: The normed eigenvectors of the correlation matrix

Variable	Factor 1	Factor 2	Factor 3
Gr_wri_pre	0.231606	0.000874	-0.083771
Gr_cl_paid	0.243740	-0.098767	0.046067
Net_pre_res	0.248193	-0.056834	-0.076297
Net_m_res	-0.108323	0.439205	-0.113691
Net_income	0.085457	0.076294	-0.605519
Share_cap	-0.060135	0.183442	0.542742
Gr_wr_pr_ced	0.285455	-0.211141	-0.099174
Other_n_res	-0.097069	0.439230	0.176855
Total_assets	0.144407	0.167661	-0.060783

Source: Own calculations.

Now we can determine the factor scores on the basis of the normed eigenvectors of the correlation matrix.

Table 7: The factor scores

Insurance company	Factor 1	Factor 2	Factor 3
ABC ASIGURARI-REASIGURARI S.A.	-0.486137	-0.384277	-0.19014
AEGON ASIGURARI DE VIATA S.A.	-0.608328	-0.353195	0.28091
ALICO ASIGURARI ROMANIA S.A.	0.038423	1.388545	-2.18763
ALLIANZ - TIRIAC ASIGURARI S.A.	2.860973	0.041270	-0.09403
ARDAF S.A.	0.098746	0.138231	0.91558
ASIGURARE REASIGURARE ASIMED S.A.	-0.551555	-0.372371	-0.19538
ASIROM VIENNA INSURANCE GROUP S.A.	1.480897	0.218879	-0.66070
ASITO KAPITAL S.A.	-0.317829	-0.477898	-0.26009
ASTRA S.A.	2.646654	-0.262791	-1.10980
ATE INSURANCE ROMANIA S.A.	-0.545593	-0.353920	-0.13402
AVIVA ASIGURARI DE VIATA S.A.	-0.581190	0.285870	0.91380
AXA LIFE INSURANCE S.A.	-0.676601	-0.118307	0.74952
BCR ASIGURARI DE VIATA VIENNA INSURANCE GROUP S.A.	-0.181626	1.024665	-0.61488
BCR ASIGURARI VIENNA INSURANCE GROUP S.A.	1.477147	-0.576161	-0.32108
BRD ASIGURARI DE VIATA S.A.	-0.570187	-0.250865	-0.02069
CARDIF ASIGURARI S.A.	-0.555414	-0.318932	-0.07398
CARPATICA ASIG S.A.	0.120433	-0.152755	-1.08949
CERTASIG S.A.	-0.516724	-0.353168	0.17499
CHARTIS ROMANIA S.A.	-0.125458	-0.483959	-0.22491
CITY INSURANCE S.A.	-0.367283	-0.370037	-0.27539
CREDIT EUROPE S.A.	-0.348479	-0.411621	-0.25510
EFG EUROLIFE ASIGURARI DE VIATA S.A.	-0.512621	-0.304621	-0.27921
EFG EUROLIFE ASIGURARI GENERALE S.A.	-0.537750	-0.350252	-0.18187
ERGO ASIGURARI DE VIATA S.A.	-0.585799	-0.340749	0.11751
EUREKO ASIGURARI S.A.	-0.599786	0.077627	0.90974
EUROINS ROMANIA ASIGURARE REASIGURARE S.A.	0.078040	-0.232667	0.09245
EXIM ROMANIA S.A.	-0.565132	-0.358535	-0.07396
F.A.T.A. ASIGURARI S.A.	-0.500376	-0.361316	0.35641
FORTE ASIGURARI REASIGURARI S.A.	-0.555055	-0.348530	-0.13917
GARANTA ASIGURARI S.A.	-0.181246	-0.103906	-0.19889

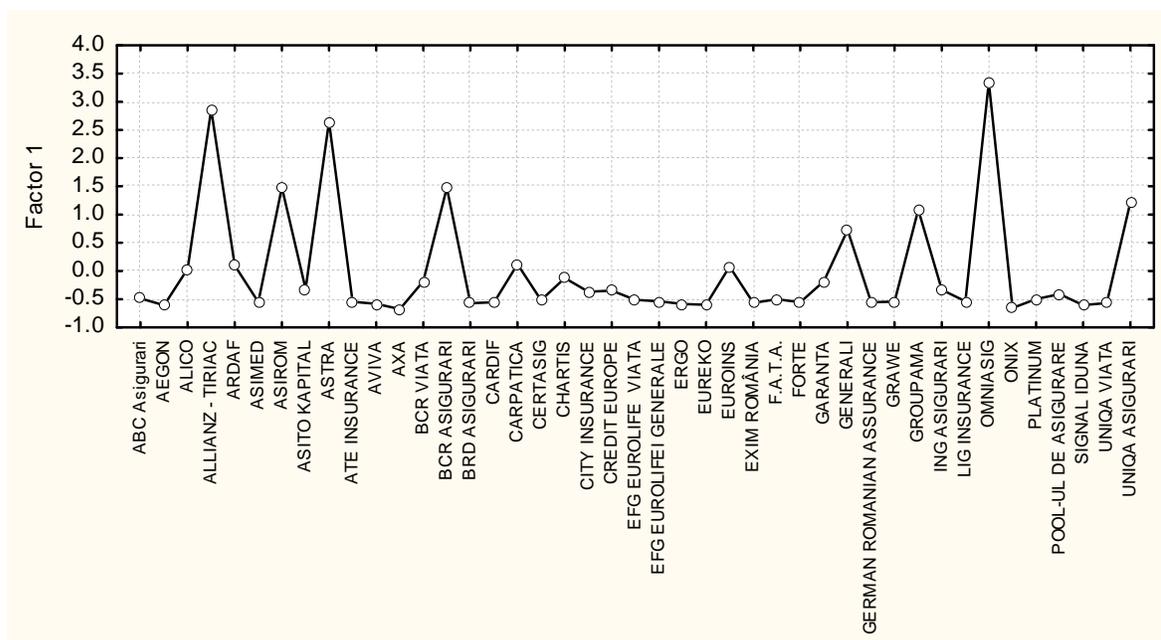
GENERALI ASIGURARI S.A.	0.725689	0.590729	-0.54364
GERMAN ROMANIAN ASSURANCE S.A.	-0.555085	-0.379003	-0.18965
GRAWE ROMÂNIA ASIGURARE S.A.	-0.540996	0.498570	-0.08319
GROUPAMA ASIGURARI S.A.	1.088360	2.316817	4.81196
ING ASIGURARI DE VIATA S.A.	-0.334688	5.272512	-1.45396
LIG INSURANCE S.A.	-0.537378	-0.362374	-0.30379
OMNIASIG VIENNA INSURANCE GROUP S.A.	3.346494	-0.887378	-0.53704
ONIX ASIGURARI S.A.	-0.655834	-0.330440	0.64210
PLATINUM ASIGURARI REASIGURARI	-0.497937	-0.375660	-0.12820
POOL-UL DE ASIGURARE ÎMPOTRIVA DEZASTRELOR NATURALE S.A.	-0.412459	-0.408732	-0.19674
SIGNAL IDUNA ASIGURARI DE VIATA S.A.	-0.604935	-0.373192	0.23190
UNIQA ASIGURARI DE VIATA S.A.	-0.568250	-0.359487	-0.05180
UNIQA ASIGURARI S.A.	1.215875	-0.736615	1.87155

Source: Own calculations.

Taking into consideration the importance of the first principal component, we can perform a classification of the insurance companies based on the values of the first PC. This variable recovers 48% of the variance of the original space and is strongly correlated with the following indicators: gross written premiums, gross claims paid, net premium reserves, gross written premiums ceded in reinsurance and total assets.

The graph below highlights that OMNIASIG is the leader in the insurance market, followed by ALLIANZ-TIRIAC, ASTRA, ASIROM, BCR ASIGURĂRI, UNIQA ASIGURĂRI, GROUPAMA, GENERALI, CARPATICA and ARDAF, while companies like AEGON, AXA, EUREKO, ONIX, SIGNAL IDUNA and others are left behind. This classification offers us a realistic synopsis of the insurance market due to the fact that the first PC takes into consideration vital indicators such as technical reserves and reinsurance policy, while CSA provides a classification which is almost exclusively based on market share. For instance, according to the CSA report, ASTRA S.A. is the leader of the insurance market in 2010. Also, according to the classification provided by CSA, ING ASIGURĂRI DE VIAȚĂ is one of the market leaders, as opposed to the classification provided by the first PC, which highlights the company's negligible gross written premiums ceded in reinsurance. This indicator is particularly important because it can significantly improve the financial stability of the insurance company.

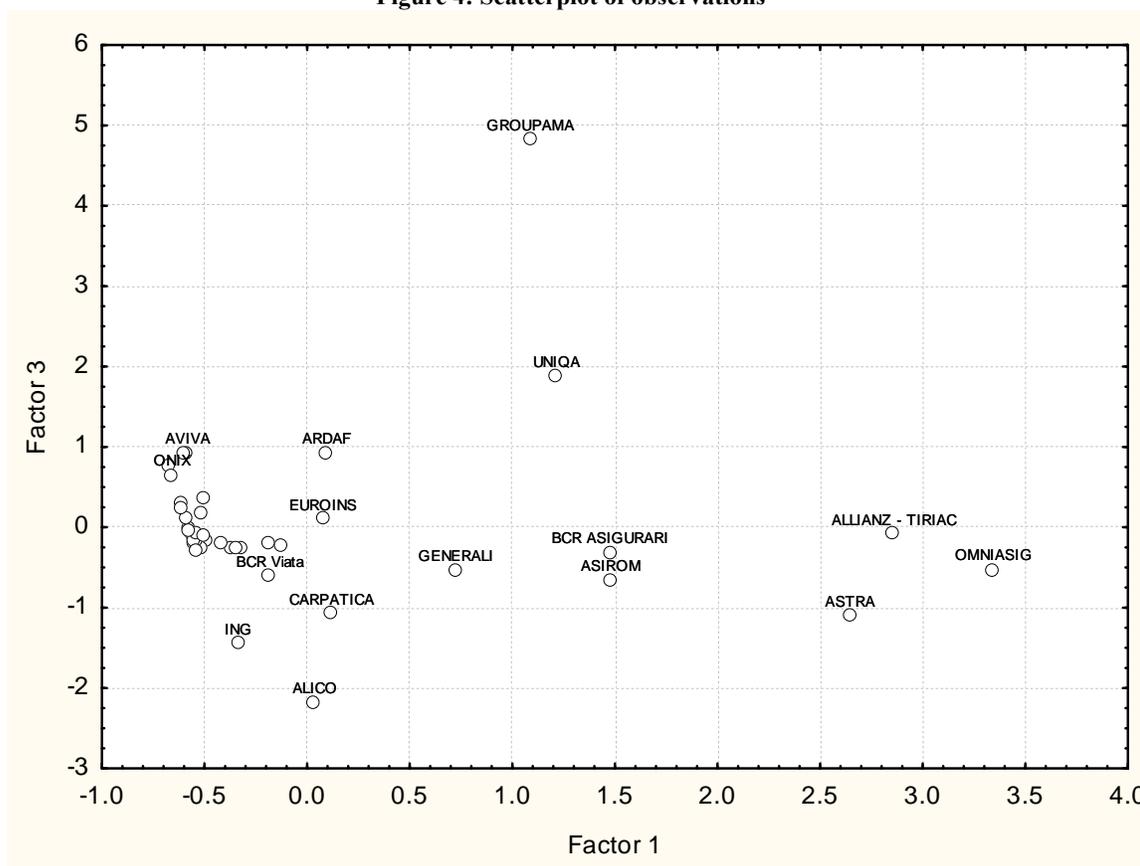
Figure 3: Plot of observations against factor 1



Source: Own elaboration.

Similarly, we can perform a classification of the insurance companies based on the first and the third PCs.

Figure 4: Scatterplot of observations



Source: Own elaboration.

Recall that the third principal component is strongly correlated with net income and share capital (negative correlation with the former and positive correlation with the latter). Therefore, the cases with negative values of the third PC make profits and have important return on equity – companies such as ALICO, ING ASIGURĂRI DE VIAȚĂ and ASTRA. Other companies (with positive scores of the third PC) make negligible profits or even run on losses: GROUPAMA, UNIQA ASIGURĂRI, ARDAF, AVIVA and EUREKO.

Also, we should note that the third principal component provides a pertinent image of the capital adequacy of the insurance companies. Companies like ALICO, ING ASIGURĂRI DE VIAȚĂ and ASTRA have an optimally dimensioned capital and very good levels of return on capital, while GROUPAMA, UNIQA ASIGURĂRI and ARDAF have too high capital-to-activity ratios. Regarding the companies with small market share and relatively low levels of profitability, the graph shows that they tend to form clusters: ASITO KAPITAL, CITY INSURANCE, CREDIT EUROPE, ABC ASIGURĂRI-REASIGURĂRI and so on.

3. Conclusions

In this paper, the principal components analysis was performed taking into account the fluctuating financial dynamic of the insurance market in 2010. Data analysis shows that the year 2010 brought a significant decrease in non-life insurance segment due to economic recession and the fading of loans for auto leases, while the life insurance segment was characterized by a real boost.

4. References

- Diamantaras, K.I., (2002) *Neural Networks and Principal Component Analysis*, CRC Press.
- Hardle, W.K.; Simar, L. (2003) *Applied Multivariate Statistical Analysis*, Springer.
- Ilin, A.; Raiko, T. (2010) Practical Approaches to Principal Component Analysis in the Presence of Missing Values, *Journal of Machine Learning Research*, 11 (2010), p. 1957-2000.
- Ruxanda, G., (2001) *Analiza Datelor*, București, Editura ASE.
- Shlens, J. (2009) *A Tutorial on Principal Components Analysis*. Available at <http://www.sn1.salk.edu/~shlens/pub/notes/pca.pdf>.
- Smith L., (2002) *A Tutorial on Principal Components Analysis*. Available at http://www.sccg.sk/~haladova/principal_components.pdf.
- Spircu, L., (2006) *Analiza Datelor: Aplicații Economice*, București, Editura ASE.

A SURVEY OF THE STRUCTURAL APPROACH IN CREDIT RISK MODELLING

CĂLIN Adrian Cantemir

*Ph. D. student, Faculty of International Business and Economics, Academy of Economic Studies,
Bucharest, Romania, cantemir_calin@yahoo.com*

POPOVICI Oana Cristina

*Ph. D. student, Faculty of International Business and Economics, Academy of Economic Studies,
Bucharest, Romania, popovici.oana@yahoo.com*

Abstract: *When discussing the risks faced by financial institutions involved in credit-granting, credit risk appears as one of the key aspects. It can be defined as the risk that one of the parties involved in a financial transaction will suffer a loss due to a decline in creditworthiness or a default of the counter-party of the transaction. The vast majority of credit risk models follow two separate approaches: the structural form and the reduced form. The aim of this paper is to present the evolution of structural models from the pioneering days of Black and Scholes and Merton to present.*

Key words: credit risk, structural approach, default, default boundary, Merton model

JEL classification: G 30 G 32, G 33

1. Introduction

Credit risk appears when a borrower does not make the foreseen payments, and it is one of the fundamental risks faced by financial institutions. Thus, the credit valuation process is very important to lending entities who seek a good correspondence between the risks assumed and the debt pricing. The literature discussing default and credit risk modelling is extensive and in constant development, and focused on two main approaches.

The first one models the evolution of the value of the firm considering that it defaults when the value is lower than a threshold or when its market value is lower than the value of its liabilities. Called the structural approach, it originated from the works of Black-Scholes (1973) and Merton (1974) and was extended by Black and Cox (1976), Longstaff and Schwartz (1995), Geske (1977), Ingersoll (1977), Merton (1978), Smith and Warner (1979), Cooper and Mello (1991), Abken (1993) Hull and White (1995) and more modern works such as Davydenko (2005), Kiesel and Scherer (2007), Münnix, Schäfer and Guhr (2011), Schäfer and Koivusalo (2011) or Becker, Koivusalo and Schäfer (2012).

The family of structural form models includes also the so-called first passage models which specify default as the first time the value of the firm's assets reaches a certain barrier, allowing default to take place at any time.

The second approach is the reduced form modelling and was used in studies conducted by Jarrow and Turnbull (1995), Jarrow, Lando and Turnbull (1997), Das and Tufano (1996), Madan and Unal (1999) Duffie and Singleton (1999), Giesecke (2005), Jarrow and Purnanandam (2007), Campbell, Hilscher, and Szilagyi (2008), Bharath and Shumway (2008) and others.

This paper focuses on the first category of credit risk models, the structural form models and discusses its evolution during the last four decades, analyzing also the empirical studies targeting the performance and accuracy these models.

2. Methodology

In order to achieve the purpose of the paper we consulted academic research ranging from 1970 to present. The research papers were gathered from databases like JStor, EBSCO Publishing, ScienceDirect, Scopus, ProQuest and SpringerLink, as well as from the defaultrisk.com platform after searching key words like: credit risk; default risk; structural form models, default boundary.

3. The structural approach to credit risk modelling

The structural approach is based on the modelling of the current total value of the firm's assets. This methodology incorporates key economic factors such as the capital structure of a company in order to model defaults. It is built on two concepts: the total assets of the firm and the barrier that triggers the default. For these reasons it is also referred as the *value-of-the-firm* approach.

The structural form appears in literature as the original background developed by Merton (1974). He regards risky loans and bonds as options and uses the pricing study of Black and Scholes (1973). In this context, default risk is directly linked to the value of the firm's assets. As mentioned above, default occurs when the market value of the firm is inferior to its liabilities. The repayment (at maturity) is seen as the lowest of the following values: the loan and the value of the firm's assets at that point. The maturity moment was highlighted because, one of the main features of structural form models is that they do not allow for defaults to occur until that point.

Assuming that the debt of a company is seen as a zero coupon bond, if the value of the firm at maturity is higher than that of the bond, the bondholder will receive the value of the mentioned bond. If the value of the firm is lower than that of the issued bond, the bondholder will get the total value of the firm's assets (again, at maturity). Thus, the repayments to the bondholder are equivalent to the price of the bond minus a put option on the value of the firm, at a price equal to the price of the bond and with the same maturity. In this context, Merton developed an explicit formula for risky bonds that can be used for estimations on the default probability.

In other words, assuming that the capital structure of a firm is composed of equity and a zero-coupon bond with D value and a maturity set at T whose values are expressed at the time t by E_t , and $z(T,t)$ with $0 \leq t \leq T$, the value of the firm V_t is calculated as the sum of equity with respect to the debt values. In this background, equity represents a call option on the firm's assets with a strike price D and a maturity set at T . If at the maturity T , the value of the assets of the firm V_T is sufficient to repay the face value of the debt D the firm avoids the default and the shareholders receive $V_T - D$. Contrary, ($V_T < D$) the firm defaults and is transferred to the bondholders whereas the shareholders receive nothing. Another assumption used by Merton (1974) is that the firm can only default at its maturity T . This is a key aspect, needed in order to be able to consider the firm equity as a vanilla European call option and use the Black-Scholes pricing formula.

Merton (1974) assumes the absence of transaction and bankruptcy costs, unrestricted borrowing at a constant interest rate, the fact that the value of the firm does not change under the influence of changes in its capital structure (Modigliani-Miller theorem) and also that the firm's asset value follows a diffusion process (Elizalde 2006). This diffusion process is given by:

$$dV_t = \mu V_t dt + \sigma_V V_t dW_t \quad (1)$$

Where σ_V is the asset volatility and W_t is a Brownian motion.

In this modelling context, the shareholders and bondholders receive at the maturity moment T $\max\{V_T - D, 0\}$ and $V_T - E_T$ as in the equations below:

$$E_T = \max\{V_T - D, 0\} \quad (2)$$

$$z(T, T) = V_T - E_T \quad (3)$$

The next step is to apply the Black-Scholes pricing formula. Thus, for the moment t with $0 \leq t \leq T$ the value of the equity is given by:

$$E_t(V_t, \sigma_V, T) = e^{-r(T-t)} [e^{r(T-t)} V_t \Phi(d_1) - D \Phi(d_2)] \quad (4)$$

Where $\Phi(\cdot)$ is the distribution function of a normal random variable and d_1 respectively d_2 are given by the following equations:

$$d_1 = \frac{\ln\left(\frac{V_t e^{(r-\mu)(T-t)}}{D}\right) + \frac{1}{2}\sigma_V^2(T-t)}{\sigma_V \sqrt{T-t}} \quad (5)$$

$$d_2 = d_1 - \sigma_V \sqrt{T-t} \quad (6)$$

Furthermore, the probability of a default at the maturity T is given by:

$$P[V_T < D] = \Phi(-d_2) \quad (7)$$

Thus, the value of the analyzed debt at the time moment t is:

$$z(t, T) = V_t - E_t \quad (8)$$

Altman (2006) considers the models of Merton (1974) Black and Cox (1976) Geske (1977) and Vasicek (1984) as a part of a first generation of structural models. Each of these studies refines the original Merton background by eliminating some of the unrealistic hypothesis.

Thus, in an extension of Merton's model, Black & Cox (1976) evaluate debt considering the situation in which the firm's management chooses the default moment in order to maximize its equity. The level of the default boundary is endogenously specified, and the model assumes that the company is financed by a single continuous coupon bond. This is a more realistic approach for firms with several debt sources. The default is avoided if the value of the equity after the payment of the coupon is greater than that of the coupon. In other words, default occurs when the value of the firm falls below a certain point

from where it's impossible to obtain new capitals for the financing of the debt. One important result of the study is the identification of the default boundary/barrier considered to maximize the shareholders claims as it can be seen in the following equation.

$$K = \frac{c}{r} \left(\frac{V}{K} \right)^{\frac{r}{\sigma^2}} \quad (9)$$

Where c is the coupon rate and r the risk-free rate.

Equation (9) shows that the default boundary is independent of the value of the firm and decreases as both the volatility and the risk-free rate have an ascending tendency.

In addition to this Black and Cox (1976) present certain methods that can be used in the case in which the valuation of contingent claims is discrete in time.

Geske (1977) modifies the Merton background assuming that the risky bonds can generate discrete interest payments. The author develops a general valuation equation for a risky coupon bond with a random number of coupon payments and a principal payment using elements discussed in his earlier works.

Vasicek (1984) focuses on the distinction between long-term and short-term liabilities in valuating credit risk which will become one of the main distinctive features of Moody's KMV models. In this study, Vasicek (1984) assumes that default will occur when the market value of the firm's assets falls under a certain level calculated as the sum off the short term liabilities plus half of the long term liabilities.

Jones, Mason and Rosenfeld (1984) conduct one of the most ample structural models using the Merton approach on a data set consisting of firms with simple capital structures and prices of bonds from the secondary market from 1977 to 1981. The authors report that forecasted prices are higher than normal with an average of 4.5%. The errors are greater for the firms with speculative nature which leads the authors to conclude that Merton's model functions better for low grade bonds given its greater explicatory power in the case of risky bonds.

In a similar study Odgen (1987) uses the prices of newly issued titles and reports that the Merton model underestimates the spreads with an average of 104 points.

The research that extended and improved the original Merton background proved very useful in the observation of qualitative aspects of credit risk. However, this fact did not make them successful in practical applications due to certain reasons. Firstly, in the Merton approach firms can only default at maturity which is a very unlikely scenario in the terms of the market evolution. In addition to this, in order to use such models for the valuation of risky bonds for firms with more than one debt class in their capital structure it is necessary to specify the priority and seniority of these structures. Furthermore the use of a log-normal distribution as in the Merton model, leads to an exaggeration of the recovery rates in case of default.

These problems were addressed by a new generation of models which remain in the Merton background but in the same time greatly modify the unrealistic assumptions, especially the fact that default can only occur at maturity when the assets of the firm aren't sufficient to cover its debts. Some interesting contributions where thus brought by Kim, Ramaswamy și Sundaresan (1993), Hull and White (1995), Nielsen, Saà-Requejo, and Santa Clara (1993), Longstaff și Schwartz (1995) and others.

Kim, Ramaswamy and Sundaresan (1993) develop a model for corporate bonds addressing interest rates stochastically and arguing the importance of liquidity crises in the unfolding of defaults. The economic idea behind the study is the modelling of the cash flows of a firm highlighting that their crises is the main reason for bankruptcy. The authors assume that the value of the firm's assets follows a geometric Brownian motion and also consider a payment for title holders equal with δV . When the cash flows of the firm fall below the exogenously fixed barrier consisting in the funds necessary to service the debt the firm defaults. The default boundary in this model is given by the following equation:

$$K = \frac{c}{r} \quad (10)$$

Where c stands for the coupon of the considered bond.

Nielsen et al. (1993) and Saà-Requejo and Santa-Clara (1999) use an exogenously determined default boundary which consist in the market value of the firm's liabilities. The value of the default boundary is specified as a Brownian geometric motion in conditions of risk neutrality. The state variable is the logarithm of the ratio of the value of de firm on the default barrier $x(t)$, the authors arguing that it is an arithmetic Brownian motion with constant drift μ_x as it can be seen in the following equation:

$$dx(t) = \mu_x dt + \sigma_x dW_{x,t} \quad (11)$$

Where σ_x represents the volatility of the changes of the solvency rate $x(t)$ and dW_x is a Brownian motion correlated with the risk-free rate. Default occurs at the first passing of $x(t)$ of zero.

Leland (1994) extends Black and Cox (1976) including the effects generated by taxes and bankruptcy costs on the default boundary. Taxing offers management the opportunity to raise the value of the firm by the use of elements of tax savings on interest payments.

The author assumes that the value of the default boundary is given by:

$$K = \frac{r - \tau c}{r - \sigma_x^2} \quad (12)$$

Where τ represents the tax rate.

The above equation shows that the default boundary is in positive relation to the coupon rate after the tax payment and in negative relation with the risk-free rate and with the volatility of the firm's assets. The default boundary is not affected by bankruptcy costs which in case of default are paid by the bondholders and not the shareholders.

One of the most relevant structural form models was developed by Longstaff and Schwartz (1995). Its importance comes from the fact that it extends the Black and Cox (1976) framework in order to generate a new model for the evaluation of risky debt by combining the default risk with the interest rate risk. One remarkable result of the study is the fact that in the case of different correlations between the assets of a firm and the changes of interest rates, major spread variations occur for firms with similar default risks. Longstaff and Schwartz (1995) use the average returns of bonds reported by Moody's and consider the implications of these returns on the credit spreads of the market. Their conclusion is that the relation between the levels of interest rates and credit spreads is inverse (they are negative correlated) and that in the vast majority of cases, the changes of interest rates were the main reason for the changes of the credit spreads of the analysed bonds.

Leland and Toft (1996) extend the contributions of Leland (1994) and Black and Cox (1976) assuming that the firm has a debt with a finite maturity. In order to obtain a solution for the value of debt faced by the firm the authors assume that this debt is rolled over, in other words perpetually refinanced at a constant maturity. Default occurs in the moment in which it is impossible for the firm to obtain new capital, situation that is generally present when the costs of the debt are equal to the return of the equity. In this model bankruptcy is determined endogenously and depends on the maturity and the size of the debt.

Taurén (1999) brings a structural model in which the base variable is the ratio of accounting liabilities on the current market value of the firm's assets. The default boundary represented by the firm's liabilities is assumed stochastic and governed by a process that replicates at a lower scale the dynamic behaviour of the management. By assuming mean reversion in firm leverage the author obtains larger forward default rates and a flatter credit spread structure compared to Meton and Longstaff and Schwartz.

Collin-Dufresne și Goldstein (2001) suggest a similar model to the one above, that has become one of the most known and intensity studied empirical structural model. The authors assume that the default boundary suffers dynamic changes in time. Similarly to Taurén (1999), the firm is adjusting its debt level reverting to a long run target plan. In addition to this the firm is assumed to contact debt opportunistically depending on the level of the risk-free rate. In this model the default boundary is given by:

$$d \ln K(t) = \kappa_p (\ln K^*(t) - \ln K(t) - v - \phi(r(t) - \theta)) dt \quad (13)$$

Equation (13) can be transformed as it follows:

$$d \ln K(t) = \kappa_p (x(t) - v - \phi(r(t) - \theta)) dt \quad (14)$$

Thus the default barrier is assumed to be a function of: the current level of log-solvency rate $x(t)$, a long-run target level of the log-solvency ratio, v , the speed of mean-reversion to the target in the absence of debt market timing, $\kappa_p \geq 0$, the sensitivity of the firm's debt issuance policy to the expected change in the risk-free rate, ϕ , and the trend in risk-free rate expectations given by the difference in the current short rate, $r(t)$, and its expected long-run level, θ , as per Vasicek's (1977) interest rate model. Hillegeist et al. (2004) use the default probabilities from Black-Scholes-Merton in a hazard model and report that they hold more information on credit risk than accounting measures. Bharath and Shumway (2004) and Duffie, Saita, and Wang (2007) observe that the distances to default – key aspects of the Black-Scholes-Merton model - play indeed a fundamental role in the estimation of default probabilities.

Davydenko (2005) notes that firms default having a negative level of the net capital, and not when reaching a zero barrier. This fact occurs due to the maturity of the debt and to the expected return of

capital. In the case of a long run debt, the default barrier will be smaller than the debt due to the possibility that the firm's assets increase their value before the debt is refinanced. The longer the maturity time, the greater the expected returns and the firm's opportunity to draw in additional capital and thus avoid bankruptcy.

When the time to maturity tends to zero, new capital will be attracted only if the value of the firm minus bankruptcy costs still exceeds the value of the debt.

Thus the default barrier becomes:

$$B = \frac{P}{1 - \alpha} \quad (15)$$

Where P is the value of the debt and α represents bankruptcy costs.

Kiesel and Scherer (2007) present a tractable structural model for the analysis of the term structure of loss distributions for portfolios. Starting from *firm-value* processes, the authors develop a multidimensional model based on a firm economic interpretation. An important feature of the model is the fact that the distribution of the individual process of the value of the firm remains constant. Thus, the term structure of marginal default probabilities is retained and can be individually modelled. In order to demonstrate the applicability of the research, the study presents a Monte Carlo for the valuation of Collateral Debt Obligations

Münnix, Schäfer and Guhr (2011) use a structural model remaining in the original Merton background. Using the Random Matrix Theory the authors demonstrate that the presence of correlations limits greatly the effect of diversification in a credit portfolio if this correlations are not identical to zero.

Schäfer and Koivusalo (2011) modify the Merton framework by incorporating a jump diffusion and a GARCH process. For the correlated diffusion the authors derive a functional dependence between the default and the recovery rates, this dependence being determined by a single parameter.

Becker, Koivusalo and Schäfer (2012) investigate default probabilities and recovery rates using the Moody's Default and Recovery Database. The authors find that the structural recovery rate, for the Merton model, is able to describe the empirical dependence of default and recovery rates and argue this aspect as remarkable, especially because the Merton framework has a number of unrealistic hypotheses as for example neglecting the coupon payment, the use of simple capital structures and considering defaults only at their maturities.

Besides the modelling studies from which a selection was presented above, the credit risk literature concerning structural form models also brings forth some comparative empirical studies targeting the efficiency and performance of several structural models.

Lyden and Saraniti (2000) perform one of the first comparisons of two structural models considering the studies of Merton and Longstaff and Schwartz. Using the prices of bonds from 56 firms present in the Bridge Information Systems, the authors observe that both models underestimate the return spreads. The errors found are constantly in relation to coupons and maturity. The authors conclude that the prediction errors found in Longstaff and Schwartz are given by volatility.

Huang and Huang (2002) use several structural models for predictions on yield spreads. The authors calibrate the inputs and the asset's volatility for each model. The variables of interest include leverage, equity premium, recovery rate and cumulative default probability for a fixed time range. Huang and Huang (2002) show that, given their calibration, the models generate similar results to the observed yield spreads.

In a study on the Merton (1974) framework, Cooper and Davydenko (2004) use a procedure opposite to that of Huang and Huang (2002). Instead of calibrating the default probabilities from the past to predict future return spreads, the authors strive to forecast losses derived from default for corporate bonds on the basis of the existent return spread, incorporating information on leverage, equity volatility, and equity risk premiums. The authors conclude that in order to generate realistic results one should use in the calibration of the volatility of assets not the yield spread between a bond and a treasury bond with similar maturity but the spread between a bond and another AAA rated bond.

Eom, Helwege and Huang (2004) test five structural models in their quest to evaluate corporate bonds. They use the models of Merton (1974), Geske (1977), Longstaff and Schwartz (1995), Leland and Toft (1996) and Collin-Dufresne and Goldstein (2001). The authors run the models using a series of 182 bond prices of firms with simple capital structures from 1986 to 1997 targeting the ability of spread estimation. The study concludes that all the models have substantial prediction errors, under evaluating the spreads.

Leland (2004) analyses the default probabilities generated by a series of structural models on risky corporate bonds following three aspects: the distinction between exogenous and endogenous default,

the comparison of the prediction power of the models for commune inputs and the way in which the models capture the average default frequencies as compared to Moody's (2001) corporate bond default data 1970-2000. The author reports that the endogenous Leland and Toft (1996) model derives a constant default boundary that optimizes the value of the equity. The exogenous Longstaff and Schwartz (1995) assumes a default boundary constant in time at level equal to a fraction of the debt β exogenously specified. Leland (2004) concludes that the logical value for β should be 1 but he observes that in this context the predictions on the default probabilities and recovery rates are weak.

Both the endogenous and the exogenous models studied underestimated the default probabilities on a short term. A similar problem arises when the models are used to predict yield spreads.

In a similar analysis Tarashev (2008) evaluates the capacity of five structural credit risk models of predicting default rates. His study considers endogenous models such as Leland and Toft (1996) Anderson, Sundaresan, and Tychon (1996) and exogenous models like Longstaff and Schwartz (1995), Collin-Dufresne and Goldstein (2001), respectively Huang and Huang (2003). One of the main conclusion of the study is the fact that the structural models above function successfully in the prediction of default rates, the observed errors being small in statistical terms. Given the calibration conducted by the author all five models generate errors inferior to those reported by Leland (2004). The authors state that this difference comes from the non-linear relation between the inputs of the models and the enquired default probabilities.

Another study regarding the performance of structural models is that of Huang and Zhou (2008). The range of models observed consists of Merton (1974), Black and Cox (1976), Longstaff and Schwartz (1995), Collin-Dufresne and Goldstein (2001) and Huang and Huang (2003) and the authors use data regarding the CDS (credit default swap) market and the stock market. The conclusion is that the Collin-Dufresne and Goldstein (2001) is the most efficient model. The authors also report that the structural models experience real difficulties in the correct forecasting of credit spreads even in the case of CDS (a purer measure of credit risk than bond spreads). Huang and Zhou (2008) also conclude that structural models are incapable of capturing the behaviour of the time series of CDS spreads and stock market volatility.

A synthesis of these performance and efficiency studies is presented in Table 1.

Table 1: Empirical studies on the performance of credit risk structural form models

Reference	Models studied	Conclusions
Leyden and Saraniti (2000)	Merton (1974) and Longstaff and Schwartz (1995)	-both models underestimate the return spreads
Huang and Huang (2002)	Longstaff and Schwartz (1995) (with stochastic interest rates), Leland and Toft (1996) (with endogenously determined default boundaries), Anderson and Sundaresan (1996), Anderson, Sundaresan, and Tychon (1996), and Mella-Barral and Perraudin (1997) (with strategic defaults), and Collin-Dufresne and Goldstein (2001)	-under empirically reasonable parameter choices, the models predict fairly consistent credit risk premiums -under calibration the models generate similar results to the observed yield spreads
Eom, Helwege and Huang (2004)	Merton (1974), Geske (1977), Longstaff and Schwartz (1995), Leland and Toft (1996) and Collin-Dufresne and Goldstein (2001)	-all models have substantial prediction errors, under evaluating the spreads. - All five models tend to generate extremely low spreads on the bonds that the models consider safe - Merton (1974), Geske (1977) share a tendency towards underestimation of corporate bond spreads. Leland and Toft (1996) model over predicts spreads on average.
Leland (2004)	Longstaff and Schwartz (1995) with arbitrary β , as representative	- The endogenous Leland and Toft (1996) model derives a constant

	of exogenous default models and Leland and Toft (1996) as a representative for endogenous default models	default boundary that optimizes equity value. The exogenous Longstaff and Schwartz (1995) model assumes a constant default boundary through time, at a level equal to an exogenously-specified fraction β of debt principal value. - Both models predict the general shape and level of default probabilities for A, Baa, and B rated debt quite well for horizons exceeding 5 years. - Both the endogenous and exogenous models examined here have <i>under-predicted</i> default probabilities at shorter time horizons. A similar problem exists when structural models are used to predict yield spreads: spreads approach zero as debt maturity becomes short
Tarashev (2008)	Leland and Toft (1996) Anderson, Sundaresan, and Tychon (1996) Longstaff and Schwartz (1995), Collin-Dufresne and Goldstein (2001), Huang and Huang (2003)	- Given the calibration conducted by the author all five models generate errors inferior to those reported by Leland (2004).
Huang and Zhou (2008)	Merton (1974), Black and Cox (1976), Longstaff and Schwartz (1995), Collin-Dufresne and Goldstein (2001) and Huang and Huang (2003)	-Collin-Dufresne and Goldstein (2001) is the most performing model - models experience real difficulties in the correct forecasting of credit spreads even in the case of CDS

Source: the author

4. Conclusions

In conclusion, the economic reason of default as modelled by structural models is the decline in the market value of the firm's assets under the level of the firm's financial obligations at a given time horizon. Extrapolating the Merton comparison of loans and options it becomes clear that only if the value of the assets is larger than the value debt, rational equity holders will exercise their "call option" on the firm's assets and refinance the debt.

The primary deficiency of Merton's model is the fact that he limits the default time to the moment of maturity of the debt, not accepting the possibility of a premature default no matter what happens to the value of firm before that maturity moment. Following this logic, it does not matter how profoundly a firm's value descends. If the firm is able to recover and face the payment of the debt at maturity the default is avoided. The probability of a default occurring only at a maturity of a debt is very unrealistic.

The research that followed the Merton approach, referred as the first generation of structural models brought several key improvements facing still some drawbacks. One of them is that structural models consider a continuous process of diffusion of the firm's value in a context of perfect information about this value and the default threshold. The difference of these two rends the distance until the default and for a high enough value the default probability may be close to zero.

In spite of these facts, the main advantage of structural models is the fact that they input stock price data into an options-theoretic framework which is predictive and highly responsive to changes in the firm's financial condition. More recent studies brought important improvements both in model efficiency and in calibration methodologies.

In the credit risk industry Moody's KMV uses structural models of default in conjunction with their credit history databases in order to determine empirical expected default frequencies by examining the historical likelihood of default for any given distance to default level obtained through structural models.

5. Acknowledgments:

This work was co-financed from the European Social Fund through Sectoral Operational Programme Human Resources Development 2007-2013; project number POSDRU/107/1.5/S/77213 „Ph.D. for a career in interdisciplinary economic research at the European standards”.

6. References:

- Abken, P. (1993) *Valuation of Default Risky Interest Rate Swaps*, Advances in Futures and Options Research, 6, p. 931-116.
- Becker A., Koivusalo, A. F. R. , Schäfer, R. (2012) *Empirical Evidence for the Structural Recovery Model*, Cornell University Library Available at <http://arxiv.org/abs/1203.3188v1>
- Bharath, S. T., Shumway, T. (2004) *Forecasting Default with the KMV-Merton Model*, AFA 2006 Boston Meetings Paper. Available at SSRN: <http://ssrn.com/abstract=637342> or <http://dx.doi.org/10.2139/ssrn.637342>
- Bharath, S. T., Shumway, T. (2008) *Forecasting Default with the Merton Distance to*
- Black, F., Cox, J.C. (1976) *Valuing Corporate Securities: Some Effects of Bond Indenture Provisions*, Journal of Finance, 31, p. 351-367.
- Black, F., Scholes, M. (1973) *The Pricing of Options and Corporate Liabilities*, Journal of Political Economics, May, p. 637-659.
- Campbell, J., Hilscher, J., Szilagyi, J. (2008) *In Search of Distress Risk*, Journal of Finance LXIII, no. 6 2, p. 899–2,939.
- Collin-Dufresne, P., Goldstein, R. (2001), *Do Credit Spreads Reflect Stationary Leverage*
- Cooper, I. A., Mello A.S. (1991) *The default risk of swap*, Journal of Finance, 46: p. 597-620.
- Cooper, I., Davydenko, S. (2004) *Using yield spreads to estimate expected returns on debt and equity*, London Business School, Working paper,
- Das, S., Tufano, P. (1996) *Pricing credit-sensitive debt when interest rates, credit ratings, and credit spreads are stochastic*, Journal of Financial Engineering, Vol. 5, p. 161 – 198.
- Davydenko, S. (2005) *When do firms default? A study of the default boundary*, London Business School, Working paper
Default Model, Review of Financial Studies 21, no. 3, p. 1,339–1,369.
- Duffie, D., Saita, L., Wang, K. (2007) *Multi-Period Corporate Default Prediction with Stochastic Covariates*, Journal of Financial Economics 83 (3), p. 635–65.
- Duffie, D., Singleton K. (1999), *Modeling the Term Structures of Defaultable Bonds*, Review of Financial Studies, 12, p. 687-720.
- Eom, Y. H., Helwege, J., Huang, J.Z. (2004), *Structural models of corporate bond pricing: An empirical analysis*, The Review of Financial Studies 17(2), p. 499–544.
- Geske, R. (1977) *The Valuation of Corporate Liabilities as Compound Options*, Journal of Financial and Quantitative Analysis, 12, p. 541-552.
- Giesecke, K. (2005), *Default and Information*, Cornell University Working Paper,
- Hillegeist, S. A., Keating, E. K, Cram, D. P., Lundstedt, K. G. (2004) *Assessing the Probability of Bankruptcy*. Review of Accounting Studies 9 (1), p. 5–34.
- Huang, J. Z., Huang, M. (2002) (revised May 2003), *How Much of the Corporate-Treasury Yield Spread is Due to Credit Risk? Results from a New Calibration Approach*, Working Paper, GSB, Stanford University.
- Huang, J. Z., Zhou, H. (2008) *Specification Analysis of Structural Credit Risk Models* AFA 2009 San Francisco Meetings Paper. Available at SSRN: <http://ssrn.com/abstract=1105640> or <http://dx.doi.org/10.2139/ssrn.1105640>
- Hull, J., White A. (1995) *The Impact of Default Risk on the Prices of Options and Other Derivative Securities*. Journal of Banking and Finance, 19, p. 299-322.
- Ingersoll, J.E. (1977) *A Contingent-Claims Valuation of Convertible Securities*, Journal of Financial Economics 4, p. 289-322.

- Jarrow, R. A., Turnbull M. (1995), *Pricing Derivatives on Financial Securities Subject to Credit Risk*, Journal of Finance, 50(1), p. 53-85.
- Jarrow, R., Purnanandam, A. (2007) *The valuation of a firm's investment opportunities: a reduced form credit risk perspective* Review of Derivatives Research vol. 10 p. 39-58.
- Jones, P., Mason, S., Rosenfeld, E. (1983), *Contingent claims analysis of corporate capital structures: An empirical investigation*, Journal of Finance 39, p. 611–625.
- Kiesel, R., Scherer, M. (2007) *Dynamic credit portfolio modelling in structural models with jumps* Ulm University and TU Munich Working Paper
- Kim, I.J., Ramaswamy, K., Sundaresan, S. (1993), *Does Default Risk in Coupons Affect the Valuation of Corporate Bonds? A Contingent Claims Model*, Financial Management, 22, No. 3, p. 117-131.
- Leland, H. (1994) *Corporate debt value, bond covenants, and optimal capital structure*, Journal of Finance 49, p. 1213–1252.
- Leland, H. (2004) *Predictions of expected default frequencies in structural models of debt*, Journal of Investment Management 2(2), p. 1–16.
- Leland, H., Toft, K. (1996) *Optimal capital structure, endogenous bankruptcy, and the term structure of credit spreads*, Journal of Finance 51, p. 987–1019.
- Longstaff, F., Schwartz E. (1995) *A Simple Approach to Valuing Risky Fixed and Floating Rate Debt*, Journal of Finance, 50, p. 789-819.
- Lyden, S., Saraniti, D. (2000), *An empirical examination of the classical theory of corporate security valuation*, Bourne Lyden Capital Partners and Barclays Global Investors, Technical report
- Madan, D. B., Unal, H. (1999), *A two-factor hazard-rate model for pricing risky debt and the term structure of credit spreads*, The Wharton School of Business, University of Pennsylvania, Working paper
- Merton, R. (1974) *On the Pricing of Corporate Debt: The Risk Structure of Interest Rates*, Journal of Finance, 2, p. 449-471.
- Merton, R. (1978) *On the Cost of Deposit Insurance When There Are Surveillance Costs*, Journal of Business, University of Chicago Press, vol. 51(3), p. 439-52
- Münnix, M., Schäfer, R., Guhr, T. (2011) *A Random Matrix Approach to Credit Risk* Quantitative Finance Papers 1102.3900.
- Nielsen, L., Saà-Requejo, J., Santa-Clara, P., (1993) *Default risk and interest rate risk: The term structure of default spreads*, INSEAD, Working Paper.
- Ogden, J. (1987) *Determinants of the ratings and yields on corporate bonds: Tests of the contingent claims model*, The Journal of Financial Research 10, p. 329–339.
- Saà-Requejo, J., Santa-Clara, P. (1999), *Default risk and interest rate risk: The term structure of default risk*, The Anderson Graduate School of Management at UCLA, Working paper
- Schäfer, R., Koivusalo, A. F. R. (2011) *Dependence of defaults and recoveries in structural credit risk models* Preprint, Cornell University Library Available at <http://arxiv.org/abs/1102.3150>
- Smith, C., Warner J. (1979), *On financial contracting. An analysis of bond covenants*, Journal of Financial Economics, 7, p. 117-161.
- Tarashev, N. A. (2008) *An Empirical Evaluation of Structural Credit-Risk Models* International Journal of Central Banking Available at <http://www.ijcb.org/journal/ijcb08q1a1.htm>.
- Taurén, M. (1999) *A model of corporate bond prices with dynamic capital structure*, Indiana University, Working paper
- Vasicek, O. (1984) *Credit Valuation*, KMV Corporation, Available at: http://www.moodyskmv.com/research/whitepaper/Credit_Valuation.pdf.

EFFECTS OF CENTRALIZATION IN THE POST-TRADING INFRASTRUCTURE OF OTC DERIVATIVES

CALISTRU Roxana Angela

*Ph. D. Associate Professor, Faculty of Economics, Department of Economic Sciences,
Petre Andrei University of Iași, Iași, Romania, roxdav@gmail.com*

Abstract: *The objective in this paper is to analyze the implications of changing financial architecture by introducing a new entity on OTC derivatives markets-Central Counter party. Area of research focused on OTC derivatives segment, which proved vulnerability during the current financial crisis, but has the potential to improve the future resilience of financial markets by reducing counterparty risk and increase transparency. In conducting the research we used mainly the method of comparative analysis, correlated with a systemic vision on financial markets, a procedure that allowed us to capture both strong aspects of the pleadings pro-centralization in post-trading stages and issues that are not justified in terms of risk generated in the macroeconomic.*

Key Words: OTC derivatives, post-trading infrastructure, central counterparty, systemic risk

JEL classification: G 15, G 20, G 28, G 33

1. Introduction

The post-trading processes of the OTC derivatives markets, which mainly include clearing and settlement of transactions, has become a highly debated topic in recent years. The complexity and the safety of the post-trading infrastructure have often been considered a cause for concern, as they failed to keep up with the increasing volumes and complexity of the OTC products.

Central counterparty can be seen as an integral part of the modern post-trading processes. Central counterparties are increasingly favoured by market participants as their utility extends beyond derivatives markets to a wider range of financial instruments (Ripatti, 2004). CCPs were established to protect market participants from counterparty risk in exchange-traded derivatives markets. Derivative contracts traded on an exchange were executed with a single counterparty, the clearing house, which processed all transactions and guaranteed performance. The organisation of central counterparty services for derivatives markets has been greatly influenced by the current organisation of the exchange markets and by the composition and identify of the parties trading on those markets. Both the exchanges and their associated clearing houses reflect a long history of development. Off-exchange, bilateral clearing remains the norm, even though some market segments have CCP clearing as well (most notably interest rate swaps).

A Central Counterparty (CCP) is an entity that interposes itself between transacting counterparties, assumes all the contractual rights and responsibilities, in order to guarantee execution of the transaction. The original transacting parties legally assign their trades to the CCP (usually through “novation”), substitute their contractual relationships with contracts with the CCP, so that the CCP becomes the counterparty to each (Bliss & Papathanassiou, 2006, p.7).

A CCP for OTC derivatives can be designed to decrease systemic risk by eliminating default risk between the counterparties to an OTC contract and by moderating the financial incentives to accumulate excessive risk in OTC markets. The lack of such a CCP for OTC derivatives, particularly CDS's, has been labeled as a significant factor in the current financial crisis (Rausser *et al.*, 2009).

This paper attempts to give a neutral evaluation of the benefits and risks related to the functionality of CCPs in OTC derivatives markets. The methodology is based on the comparative analysis of the two clearing structures that co-exist in the derivatives markets: bilateral clearing and CCPs clearing, highlighting the advantages proved by the CCPs in stressing periods. The continuing evolution of derivatives clearing structures has a straight way, drawn by regulators of financial markets; due to the recent experienced crisis CCPs are seen as an important structure on the OTC derivatives markets able to provide so necessary mitigation of systemic risk.

2. OTC derivatives market - size and complexity

Financial derivatives are traded both on the centralized and controlled stock markets and on non-regulated markets called “over-the-counter”. The exchange-traded derivatives and the OTC-traded

derivatives have experienced different from their insertion in the financial market to date, because the defining elements that characterize them.

In the traded derivatives exchanges derivatives are standardized in terms of characteristic elements. Also, the participants authorized intermediaries who have the right to conclude transactions on their behalf or on behalf of clients such as institutional investors (banks, mutual funds or pension, insurance companies, corporations) and retail investors. The main advantage of these markets is to minimize the risk of default resulting from holding a position, as a result of using the services of an entity specialized in derivatives traded recording and guaranteeing fulfillment of the obligations arising from holding an open position with such tools, entity called clearing house or central counterparty.

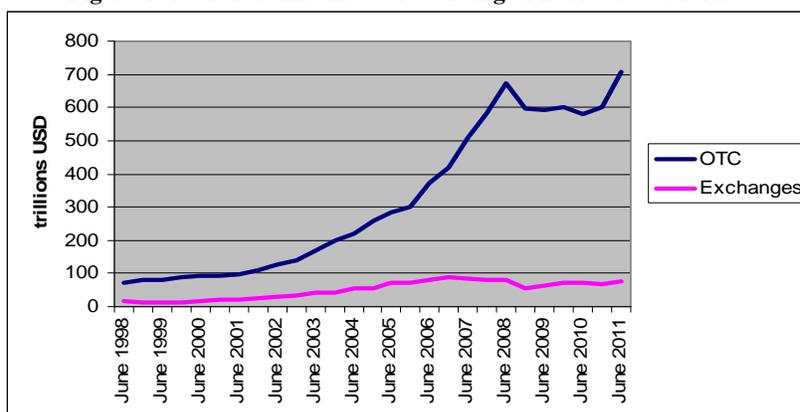
On the other hand, the transactions in the OTC markets are not subject to regulation and supervision by a public authority. The main element that characterizes the derivatives trading in the OTC markets is that the contract specifications are not standardized, which are adapted to the peculiarities of both parties to the transaction. The OTC derivatives markets are decentralized and unregulated, except by contract law, and the parties are not required to report transactions.

In the OTC markets, supply and demand met through specialized financial institutions (dealers) using several different negotiation techniques. The "traditional" negotiation is generally conducted over the telephone or using an electronic bulletin board by the dealers for posting their quotes and is known as bilateral trading because only the two market participants directly observe the quotes or execution. An enhancing technique is using an electronically brokered platform. Most of the time the firm operating the platform acts only as a broker and does not take a position or act as a counterparty to any of the trades made through the system. Another situation is when an OTC derivatives dealer sets up his own proprietary electronic trading platform and the quotes are posted exclusively by the dealer, other participants could only observe them. Some of these trading techniques could be mixed with clearing facilities, other ones could be not.

OTC derivatives markets register a spectacular growth from their inception in the early 1980s through the first half of 2008. In June 2008, the total notional amount of derivatives traded over the counter reached a peak of 672 trillion American dollars, an increase of ten times compared to 1998, the year when Bank for International Settlements has been able to estimate the size of the OTC market for derivatives by surveying financial firms. The financial crisis stopped the growth and generated a backlash of volume traded on derivatives markets. The first-ever decline of *notional amounts outstanding* came in the second half of 2008. Even so, after a slight decrease in 2008, there is a uptrend in the near future. By the end of 2010 the OTC market value of derivatives was limited around 600 trillion USD, slightly below their maximum level reached in 2008. A major increase was recorded in the first half of the 2011. The total *notional amounts outstanding* of over-the-counter (OTC) derivatives rose by 18% in the first half of 2011, exceeding 700 trillion USD by the end of June 2011.

By comparison, the volumes traded on the exchange markets are significantly smaller: the peak in this period was only 89 trillion USD at the end of 2006. The big notional amount lost by the exchange traded derivatives markets in the second half of the 2008, has been recovered in the next 3 years, so in June 2011 both futures and options markets having a total notional amounts outstanding of 82.8 trillion USD.

As it is shown in the graph below, the global financial crisis did not have relevant effects on the volumes traded on the derivatives exchanges, as on the OTC markets.

Figure 1: Notional Amounts Outstanding of Derivatives Markets

Source: BIS data bases available on www.bis.org

Notional amounts outstanding provide a measure of market size and a reference from which contractual payments are determined in derivatives markets. These gross notional figures tend to overstate the true risk exposures, because many outstanding positions are offsetting. Gross market values provide a more accurate measure of the scale of financial risk transfer taking place in derivatives markets, as are defined as the sums of the absolute values of all open contracts. For example, the estimated market replacement cost of outstanding positions as at June 2011 was around 19 trillion USD – less than 3% of the gross notional amounts. Many of the positions that can be netted out must still be appropriately risk-managed over their existence, adding challenges for counterparty risk management. The efficient risk management and multilateral netting opportunities that CCPs can provide in these circumstances are one of the key benefits of requiring that these derivatives be cleared centrally (BIS-CGFS, 2011).

3. Bilateral versus CCP clearing on the OTC derivatives markets

Since OTC derivative markets were designed in the early 1980s, transaction clearing and settlement have been mostly bilateral, between the two counterparties. Even if transactions take place on multilateral trading platforms, information on each trade is often not stored centrally, but separately at each of the counterparties, this making the difference of an exchange, where there are books for central registering. Ensuring that this information is consistent is a major challenge and the current crisis reveal that.

Another major problem with bilateral clearing is that it has resulted in a proliferation of redundant overlapping contracts, exacerbating counterparty risk and adding to the complexity and opacity of the interconnections in the financial system. Redundant contracts proliferate because counterparties usually write another offsetting contract, rather than closing them out. All of this has left regulators and other relevant authorities largely in the dark about potential knock-on effects of a major counterparty failure. (IMF, 2010)

Ledrut & Upper reveal that OTC derivatives have a number of characteristics that have important implications for post-trade processing. OTC derivatives contracts are often very complex products, with different specifications, tailored to the needs of a specific customer, so they can be considered assets that can be traded freely. OTC derivatives are bilateral contracts, usually not fungible, which makes it difficult for traders to close positions. One way to circumvent this problem, the novation of trades to another party, was a major factor behind the confirmation backlog. Also, contracts often have long maturities and counterparties remain exposed to each other until the contract expires. This makes counterparty risk a much greater concern in OTC derivatives markets than in securities markets. Market participants have developed a variety of measures to handle counterparty risk, for example collateral arrangements, which add to the complexity of post-trade processing. (Ledrut E. & Upper Ch., 2007)

Table 1: Bilateral versus CCP Clearing

Selected characteristic	Bilateral OTC	CCP
Trading	Bilateral	Bilateral
Clearing	Bilateral	Centralised
Counterparty	Initial buyer or seller	CCP
Product features	All	Standardised and liquid
Product examples	Foreign exchange swaps Interest rate swaps Credit default swaps	Plain vanilla interest rate swaps
Participants	All	Typically larger dealers and higher-rated market participants
Market maker importance	Significant	Significant
Collateral practices	Bilateral posting of collateral	Margin requirements uniform for all
Margin movement	Decentralised and disputable	Centralised enforcement by CCP
Risk buffers	Regulatory capital	Equity and margins
Clearing and settlement	Bilateral	Centralised
Netting	Some gross exposures netted bilaterally and some ad hoc multilateral netting	Exposures are netted multilaterally and position is against a CCP
Regulation	Self-regulation and reliance on “market practices”	Self-regulation, reliance on “market practices” and public sector regulation of CCP
Transparency of exposures and activity	Limited or none	Detailed information available but not disseminated
Transparency of prices	Pre-trade prices are non-binding quotes Actual transaction prices typically not published	Pre-trade prices are nonbinding quotes No automatic publication of transaction prices

Source: Cecchetti et al., 2009, p. 48

Alongside the expansion in OTC derivatives market activity, the clearing industry has undergone significant changes over the past decade (BIS-CPSS, 2010). These changes include, in some cases, the consolidation of existing CCPs to form large, multi-product CCPs (horizontal integration) and, in others, the formation of groups that include exchanges and trading platforms, and in certain instances central securities depositories (vertical integration). Both forms of integration bring benefits. Horizontal integration allows a combination of central clearing and other post-trade functions to service a range of trading venues or market participants, possibly in different jurisdictions. Vertical integration can facilitate harmonised trading and post-trade activity, potentially resulting in efficiencies for both participants and infrastructure providers.

Clearing of OTC derivatives is concentrated now in a handful of large CCPs, but a number of new CCPs are being proposed to serve smaller or nascent markets (Table 2).

Table 2: Current and prospective CCPs clearing OTC derivatives

Domicile	Clearing service	Products	Status
Brazil	BM&F Bovespa	Equity index and currency options	Active
Canada	CDCC	Equity options	Active
China	Shanghai Clearing House	Not yet specified	Proposed
France	LCH.Clearnet SA	Credit default swaps	Active
Germany	Eurex Clearing	Credit default swaps Equity derivatives Interest rate swaps	Frozen Proposed Proposed
Hong Kong	HKEx	Interest rate derivatives and non-deliverable forwards	Proposed
India	Clearing Corporation of India	FX swaps	Active
Japan	JSCC	Credit default swaps Interest rate swaps	Active Proposed

Poland	KDPW CCP	Interest rate derivatives	Proposed
Singapore	AsiaClear	Commodity, energy and interest rater derivatives	Active
Sweden	Nasdaq OMX Stockholm AB	Commodities	Active
Sweden	Nasdaq OMXSwap ClearNordic	Interest rate swaps	Proposed
United Kingdom	CME Clearing Europe	Energy and commodity derivatives Interest rate swaps	Active Proposed
	ICE ClearEurope	Credit default swaps and energy derivatives	Active
	LCH.Clearnet Ltd	Interest rate swaps and commodity derivatives Equity derivatives	Active Proposed
	NYSE Liffe	Equity and commodity derivatives	Active
United States	CME Group	Interest rate swaps, credit default swaps, and commodity and energy derivatives FX	Active Proposed
	ICE Clear Credit	Credit default swaps	Active
	IDCG	Interest rate swaps	Active
	NYPC	Interest rate swaps	Proposed
	Options Clearing Corporation	Equity derivatives	Proposed

Source: BIS, CGFS, 2011, p. 24

The global financial crisis onset in 2008 has highlighted that the decentralised nature, combined with the heterogeneity of the instruments traded, naturally makes bilateral OTC markets less transparent than their centralised counterparts. Information on prices and quantities in bilateral OTC markets is much more difficult to come by. Also, in many bilateral OTC markets, market-makers play an important role as intermediaries, profiting from price discrimination among their customers – one possible explanation for the absence of voluntary post-trade price transparency.

In September 2009, G-20 Leaders agreed in Pittsburgh that, in order to allow OTC derivatives markets to fulfil their economic role in a way which does not endanger the stability of the system: “*All standardised OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non centrally cleared contracts should be subject to higher capital requirements.*”

4. Assessing the advantages and disadvantages of using CCPs on the OTC derivatives markets

The way CCPs activity on the market is designed brings multiple benefits. Starting from the novation, continuing with the equity capital injected by its members, who own it, passing through the margin collection, adding the *marking to market* process will finally achieve some good effects for the individual and market risks mitigation. The initial margin, which can be in cash or in liquid securities, has the role of covering potential future exposure in the event that a clearing member defaults. The CCP will reject new trades from a member whose initial margin is no longer sufficient. Marking positions to market each day permits to CCPs to have a good control of exposures, to ensure consistent evaluation across its participants and to limit the risks. Concentrating all outstanding derivatives positions in a CCP is that it improves and simplifies the management of counterparty risk, as well as increasing the efficiency of collateral management. (Cecchetti et al., 2009)

The primary force behind the creation of CCPs is its ability to reduce systemic risk through mutualization of losses resulting from clearing member failures, multilateral netting of exposures and increased transparency in the post-trade processing.

The most important benefit of centralized clearing is the reduction in systemic risk achieved through the *mutualization of losses* among all clearing members. If in the case of large concentrated bilateral exposures, one firm's default can leave another firm immediately insolvent or can lead to informational asymmetries that cause trading to freeze up, the CCPs based markets allow to absorb the failure of a member. CCPs, disposing by the margin requirements system, are able to limit the probability of immediate propagation to other solvent members of the losses incurred by an insolvent member. If losses incurred by an insolvent member exceed that member's posted collateral and capital contribution, the CCP spreads the remaining losses amongst the non-defaulting members. An individual member in a bilaterally-cleared system could be irreversibly affected by losses of its counterparty, but the CCP with its

ability to mutualise losses will be able to absorb defaults far better. Thus, CCPs provide mechanisms for first containing the effects of insolvency of a member and then widely dispersing the remaining effects. (Bliss & Papathanassiou, 2007). From a systemic perspective, it is generally preferable for a large number of parties to experience small losses than for a small number of interconnected parties to experience large losses. Thus, participants in centrally-cleared derivatives markets pose less of a systemic risk than participants in bilateral OTC markets. (Kress, 2011)

Due to its greater ability to mutualise losses, CCP could react better to shocks caused by one firm failure, being it a big actor on the OTC derivative market. A bilaterally clearing system makes pressure on each individual participant, which has to find his own solution to protect against the default risk of other members. A dealer can value his own positions against his counterparties, but he cannot know the counterparties positions with other dealers, and thus he can not draw the real situation of his counterparties' risks. They could require additional collaterals, reject securities considered risky as collateral, retreat from deals in order to avoid market risks, all with possible adverse affects on the market. CCP system may be expected to withstand greater common shocks than a bilaterally cleared system, being helped by the margining system and the exposure monitoring process. In addition, being the counterparty to all positions the CCP is in a unique position to immediately understand the positions of all market participants and can assess the risks much better. As Bliss & Papathanassiou reveal, the natural response to uncertainty in times of stress is heightened risk aversion and a tendency to act defensively and thus impose greater precautionary measures than a fully informed central counterparty would do. (Bliss & Papathanassiou, 2007)

As counterparty for all trades, the *CCP can net multilaterally*, thereby facilitating the reduction of both counterparty and operational risks. Netting on a multilateral basis is done by summing each participant's bilateral net positions with those of the other participants to arrive at a multilateral net position. The resulting multilateral net position is the bilateral net position between each participant and the CCP. The available data indicate that multilateral netting of new CDS trades reduces gross notional exposures by approximately 90 percent. As more counterparties start using the CCPs, the benefits could be even larger (Cecchetti et al., 2009). Additionally, CCPs allow parties to cancel out, or net, offsetting derivative exposures more easily than in bilateral markets. Netting beneficially reduces the interconnectedness of market participants, lowers collateral demands, and facilitates market exit (Kress, 2011). Multilateral netting is achieved by making contracts between different counterparties fungible so that they can be offset against each other. Traders can therefore fully close a position by entering an offsetting contract with any other member of the clearing house. (Ledrut E. & Upper Ch., 2007)

Finally, CCPs can serve an information-gathering function, tallying outstanding exposures in previously opaque OTC markets to help market participants and regulators identify potential risks. A CCP could *improve transparency in OTC derivative markets* by, for instance, publishing pricing and volume information. (Kress, 2011). It is true that improving transparency, CCP redistributes informational advantages among market participants, to the disadvantage of those currently enjoying an information advantage, for example a major OTC derivative dealer. That could be a reason for some OTC market participants to avoid using CCPs services. Ideally, there should be a single CCP for each product type that collects and shares information in ways that are useful to the relevant authorities or they should agree to a standard framework. Relevant regulators are working on such templates and information sharing protocols in the OTC Derivatives Regulators Forum, which was formed in September 2009.

Giving all these benefits, after the current crisis experience, when CCPs have proven their worth (as illustrated by their role in managing the consequences of Lehman Brothers' default for example), it is likely that more CCPs will be created. But it is necessary not to outweighed the potential *costs of multiple CCPs creation*. First, with multiple CCPs, large market players would need to post equity capital and initial margin in each one. Second, the existence of multiple CCPs makes regulatory consistency important in order to prevent regulatory arbitrage. Third, with several CCPs, someone will have to go through the costly process of consolidating trading and position information. Finally, multilateral netting will be more difficult unless sufficient international coordination takes place across CCPs handling similar instruments. So while a single CCP would almost surely reduce systemic risk relative to a bilateral OTC system, multiple CCPs may not (Duffie & Zhu, 2009).

At the same time, it is important to recognize that CCPs concentrate counterparty and operational risks, and thus magnify the systemic risk related to *their own failure*. Hence, a CCP needs to withstand such outcomes by having sound risk management and strong financial resources. The problem of keeping a CCP liquid in the face of the failure of one or more participants or even their own failure requires that

liquidity be available somewhere. The current crisis brought again in discussion an unresolved question: *the access of CCPs to the central banks facilities*. Currently, the access to central bank liquidity varies widely across jurisdictions. In the case of a CCP failure central banks as lenders of last resort might react, as well as the incentives and political issues that surround the options facing the lender of last resort. Thus, the last line of defence in the event of a systemic crisis is the regulatory authorities, whether it be the central bank providing liquidity or a financial services authority providing moral suasion and regulatory discipline.

Furthermore, moving OTC derivatives to a CCP is not without *interim costs*, which may particularly discourage the dealer community from moving its trades to a CCP (IMF, 2010).

5. The regulatory framework for CCP on the OTC derivatives markets

Because of the damage that would occur in the event of a disruption, central banks and securities regulators have taken a strong interest in defining best practices for CCP risk management. This can be seen, for example, in the detailed and comprehensive international standards for CCP risk management published jointly in 2004 by the Committee on Payment and Settlement Systems (CPSS) and the International Organization of Securities Commissions (IOSCO) (BIS-CPSS & Technical Committee of IOSCO, 2004). These standards were prepared for financial contracts, including derivatives traded on securities exchanges and in OTC markets. The CPSS has also more recently considered some implications for financial stability of the market structure developments in the clearing industry (BIS-CPSS, 2010).

Central clearing of OTC derivatives has increased, particularly in the credit derivatives area, in light of the G-20 objective of mitigating systemic risk. However, the pace at which various jurisdictions are implementing central clearing mandates and actual levels of central clearing currently seen do not support a conclusion that progress is on track to fully meet the G-20 commitment, which calls for central clearing of *all* standardised OTC derivatives by end-2012.

Japan and the United States are the only jurisdictions that have adopted legislation mandating central clearing of standardised OTC derivatives. Most jurisdictions, including the European Union, intend to have a legislative and regulatory framework providing for mandatory clearing in place as of end-2012. In many jurisdictions, including Japan, the United States, and the European Union, legislative changes must be followed up with more technical implementing regulation for the requirements to be fully effective.

Table 3: Central clearing regulation framework

	Law and/or regulation in force by end-2012 requiring all standardised OTC derivatives to be cleared through CCPs	Legislative and/or regulatory steps completed toward standardised OTC derivatives	Additional legislative and/or regulatory steps needed for a central clearing requirement for standardised OTC derivatives to be effective
Canada	Under review; provincial legislation expected by end-2012 with rule-making contingent on international harmonisation efforts	Legislation in place in provinces where the majority of OTC derivatives trades are booked but further work required to harmonise across all province	Yes; upcoming consultation on clearing will inform rule making; potential legislative changes that may be needed to support clearing are under review
European Union	Yes (EMIR)	Legislation not yet adopted; EMIR proposal made in September 2010	Yes; EMIR to be adopted by end-2011; technical rules to be drafted by ESMA, EBA, and EIOPA
Japan	Yes, but initially the requirements will apply only to Yen interest rate swaps and CDS (iTraxx Japan indices)	Financial Instruments and Exchange Act (FIEA) amended May 2010	Yes; Cabinet Ordinance to be amended to include requirement for CCP clearing of trades “that are significant in volume and would reduce settlement risks in the domestic market”
United States	Yes	Dodd-Frank Act adopted in July 2010	Yes; CFTC and SEC implementing regulations to be finalised

Source: Financial Stability Board, 2011: 50-53

Although the current European securities clearing and settlement infrastructure is still highly fragmented and inefficient, there are several projects under consideration that would set up new CCPs in countries where there is currently no such market infrastructure. Economies of scale and network externalities seem to favour a high degree of concentration. Therefore, several major global investment banks have expressed support for the idea that Europe should have a single central counterparty clearing house, providing multicurrency and multi-product (equities, bonds, derivatives and commodities) service. A core argument articulated in this debate is that the creation of a single CCP in Europe would create clearing arrangements that mirror those in the United States, where clearing arrangements are already more consolidated, and therefore more cost effective than in Europe. (Rausser *et al.*, 2009).

CCPs provide services on a European basis but remain regulated at national level. In view of the CCPs systemic importance, the European Commission proposed legislation governing their activities so as to eliminate any discrepancies among national legislations and ensure safety, soundness and proper governance. The following key requirements could be found in EU legislation regarding CCPs (Commission of the European Communities, 2009):

(1) Conduct of business and governance (e.g. measures to address conflicts of interest, access, transparency of risks and procedures, business continuity, and minimum standards of expertise).

(2) Rules to ensure that CCPs do not employ low risk-management standards.

(3) Legal protection to collateral and positions provided by clearing members' customers, so as to encourage a wide range of market participants to use central clearing.

(4) Authorisation granted, under this proposal will allow CCPs to provide their services in all Member States; the European Securities and Markets Authority (ESMA) should give CCPs authorisation to operate in the EU.

(5) ESMA should also assist the Commission in preparing decisions for recognising third country CCPs that are subject to comparable, comprehensive supervision and regulation, in order to assess requests for market access from third country providers on the basis of prudential concerns.

The regulators will continue to work on these issues, in the context of the financial services regulatory dialogue, in order to ensure global consistency of policy approaches and avoid any risk of regulatory arbitrage.

6. Conclusions

Bilaterally-cleared OTC derivatives have been proved to be very attractive and successful for the market participants. Their growth has exceeded those of exchange-traded CCP cleared markets over the last 14 years. Even if they were considered safe and stable facing market shocks, the crisis dismantled this myth. The very big failures experienced during the current crisis were caused by the counterparty risk, occurred especially in markets where trading is bilateral, with directly negotiated terms, such as CDS derivatives. That is why the OTC bilaterally-cleared markets were revealed being more vulnerable to systemic risk. The lack of formal clearing arrangements has been identified as the main reason such markets did not function properly during the crisis. Consequently, regulators have seek to find solutions and CCPs appear as one of the necessary conditions to improve the resilience of financial markets.

CCPs provide an institutional structure for managing credit risk that has proven successful in exchange-traded derivatives. By mutualization of losses, CCPs provide credit risk mitigation and mechanisms by which absorb and disseminate the effects of a member's insolvency, keeping other members in health. In addition, CCPs multilateral nettings facilitate the reduction of both counterparty and operational risks. Thus, CCPs are structurally better suited to minimize systemic risk than bilaterally cleared markets.

The introduction of CCPs alone is not likely to be sufficient to ensure a more transparent and efficient trading process for OTC derivatives, in order to make derivatives markets safe, sound and resilient in the face of large shocks. It is important to endeavour to complement the introduction of CCPs with improvements in trading and settlement infrastructure. This includes standardisation as a prerequisite for other tools, the greater use of automated trading, the use of central data repositories for all trades and enhanced risk management and disclosure requirements for market participants themselves.

7. Acknowledgements

This work was supported by the project "Post-Doctoral Studies in Economics: training program for elite researchers - SPODE" co-funded from the European Social Fund through the Development of Human Resources Operational Programme 2007-2013, contract no. POSDRU/89/1.5/S/61755.

8. References

- Bank for International Settlements, Committee on Payment and Settlement Systems, Technical Committee of the International Organization of Securities Commissions (2004, March). *Recommendations for Central Counterparties. Consultative Report*, Basel, Switzerland, Retrieved from BIS database
- Bank for International Settlements, Committee on Payment and Settlement Systems (2010, November). Market structure developments in the clearing industry: implications for financial stability, *CPSS Publications*, 92 (November)
- Bank for International Settlements, Committee on the Global Financial System (2011). *The macrofinancial implications of alternative configurations for access to central counterparties in OTC derivatives markets*, no. 46 (November), Basel, Switzerland, Retrieved from BIS database
- Bliss, R. & Papathanassiou C. (2006, March 8). *Derivatives clearing, central counterparties and novation: The economic implications*. Wake Forest University, working paper. Retrieved from <http://www.jscs.co.jp/en/ccp12/materials/docs/3.pdf>
- Bliss R. & Steigerwald S.R. (2006). Derivatives clearing and settlement: A comparison of central counterparties and alternative structures. *Economic Perspectives, Federal Reserve Bank of Chicago*, 4Q, 22-29
- Bliss, R. & Papathanassiou C. (2007, July 16). *Derivatives Clearing, Central Counterparties, and Systemic Risk*, WakeForestUniversity, Working Paper. Retrieved from http://economix.fr/pdf/profs/Bliss_Papathanassiou-2007.pdf
- Cecchetti, G. S., Gyntelberg J. & Hollanders M. (2009). Central counterparties for over-the-counter Derivatives, *BIS Quarterly Review: International Banking and Financial Market Developments, September*, 45-58
- Commission of the European Communities (2009) - Communication from the Commission on *Ensuring efficient, safe and sound derivatives markets: Future policy actions*, COM(2009) 563, Brussels
- Duffie, D. & Zhu, H. (2009, July 1st). *Does a Central Clearing Counterparty Reduce Counterparty Risk?* Stanford University, working paper. Retrieved from http://www.nber.org/public_html/confer/2009/SI2009/Risk/Duffie_Zhu.pdf
- Financial Stability Board (2011, October). *OTC Derivatives Market Reforms. Progress report on Implementation*. Retrieved from FSB database
- International Monetary Fund (2010, April). Making Over-the-Counter Derivatives Safer: The Role of Central Counterparties, *Global Financial Stability Report: Meeting new Challenges to Stability and Building a Safer System*, Chapter 3
- Kress J. C. (2011). Credit Default Swaps, Clearinghouses And Systemic Risk: Why Centralized Counterparties Must Have Access To Central Bank Liquidity. *Harvard Journal on Legislation*, 48(1), 49-94
- Ledrut E. & Upper Ch. (2007). Changing post-trading arrangements for OTC derivatives, *BIS Quarterly Review*, December, 83-95
- Rausser, G. C., Balson, W. & Stevens, R. (2009). Centralized Clearing for Over-the-Counter Derivatives, *Department of Agricultural and Resource Economics, University of California, Berkeley*, Retrieved from Escholarship database
- Ripatti K. (2004, December 30). Central counterparty clearing: constructing a framework for evaluation of risks and benefits, *Bank of Finland Discussion Papers 30, Helsinki*

FROM FISCAL SOVEREIGNTY TO A GOOD FISCAL GOVERNANCE IN THE EUROPEAN UNION

CHILAREZ Dănuț

Ph. D. Assistant professor, Constantin Brâncoveanu University of Pitești, Pitești, Romania, dan_chilarez@yahoo.com

ENE George Sebastian

Ph. D. Associate Professor, Constantin Brâncoveanu University of Pitești, Pitești, Romania, george_sene@yahoo.com

Abstract: *The European Union and its Member States are facing significant challenges in addressing the current economic and financial crisis.*

In this context, the European officials have required an extensive and deep investigation of the European integration, especially towards the harmonisation of the fiscal policy, acknowledged as a sovereign prerogative of the Member States, considering that the role played by the fiscal policy was significant in creating difficulties and fiscal imbalances.

One of the greatest challenges related to the actions of the European Community institutions is to identify solutions to the problems with implications for the fiscal policy harmonisation whose approach should consider the compatibility of different systems and relations of the Member States, while respecting the sovereignty, the fiscal policy and the obligations imposed by the international competitiveness on Europe.

Key words: fiscal policy, fiscal sovereignty, fiscal harmonisation, fiscal competition, fiscal governance

JEL classification: F 36, G 38

1. Introduction

Through the institutional system created and further developed at EU level, unified by the Lisbon Treaty and in force since 2009, a new form of legal order has been established in favour of which the States have limited their sovereign rights in more and more extensive areas, so that the decision-making power in the European Union is divided on two levels:

- one at European Community level, consisting of exclusive competences, ceded to the EU bodies and exercised exclusively by them, including the antitrust and regulatory policy of the common market, the customs and trade policy and the monetary policy, in the case of the Member States of the European Monetary Union;
- one at national level, consisting of exclusive competences remaining in the sphere of the Member States' sovereignty, but also shared competence, which their governments share, according to each case and to a certain extent, with the EU community organisations, which include transport policy, environmental policy, consumer protection, even foreign policy, etc.

Regarding the fiscal policy, although the EU treaties contain a number of provisions affecting the fiscal area, if we consider strictly those related to the division of fiscal competences between the EU Community and the Member States, all treaties deal with it as with an exclusive competence of the Member States, but by the distinct referring to the field of indirect taxes and respectively to the field of direct taxes, the situation is different.

The outlining of the main objectives of the fiscal policy has been and continues to be directly related to this purpose, but also to the fear that the removal of the restrictions on capital mobility and on people could reduce the tax base between the Member States, through their migration, because of the fiscal competition between the Member States, which would affect the subsequent degree of labour employment and the ability to provide social protection.

If in the case of the monetary policy the member states have managed to reach a consensus by accepting the creation of a single currency and of the introduction conditions in each state, in the case of fiscal policy it is far from having won everybody's approval, because no state is willing to entirely give up its right to charge taxes from its citizens the way it desires.

2. Fiscal harmonisation and sovereignty.

According to the powers conferred by the national sovereignty, in the internal financial law and in the international one fiscal sovereignty is established as a major expression of the national sovereignty and it manifests itself as such, so that the national fiscal system determines its structure, priorities and objectives according to the needs of the financial budget resources and to the ethical, economic, social and politic outlook of the public policy makers.

In these circumstances, if we accept that sovereignty represents a quality of the state power under which it is destined to decide, without any interference, in internal and external affairs, there occurs an important issue that concerns the state sovereignty when it becomes a member of a regional organisation, such as the European Union, whose fundamental objectives are in accordance with the objectives of each Member State, aiming at the progressive similarity of the economic development levels, based on common trade policies, in a union in which the principles of loyalty and solidarity must work. According to the underlying principles of the EU, the common policies are governed by the four freedoms placed at the basis of the common market: free movement of goods, free movement of persons, free movement of capital and payments and free movement of services.

In the context of the EU overall policy, the fiscal policy is considered to be essential for all the countries in the European Union and it must be regarded as a symbol of sovereignty. Experience has also shown that within the union, the impact of the national fiscal policy decisions can lead to effects on the other member countries, or it may affect the two key factors: ensuring the EU freedoms, mainly the four freedoms of movement, and the protection of the single market, especially the fair competition policies and the administrative and judicial cooperation. It results therefore that it is necessary to address fiscal sovereignty by the integration of the national fiscal policies with the general policies of the EU areas, which should take place through institutional cooperation and harmonisation of their fiscal laws with the governing bases adopted by competent bodies in the EU.

To achieve these goals, the sovereign member states must follow the rules established by the EU, which inevitably intersect the field of fiscal policy, which can lead to a situation incompatible with the preservation of the fiscal sovereignty. To preserve in practice the compliance with the principles of fiscal sovereignty, it is essential that these rules are applied in a Member State as a result of its own decision, or that these rules limit to a certain extent its ability to modulate the fiscal decisions. In this context, it must be accepted that conscious, committed and mutual participation within the cooperation relations among the sovereign states that have joined the great European building, requires evidence of their willingness to accept or not, to acquire or not new forms of collaboration and the rules established within the Union.

Initially, due to the heterogeneous organisation and operation systems of the future Member States, it is expected that the measures taken in the fiscal field will be based on *the principle of subsidiarity*, according to which taxation and allocation policies do not represent an area of EU competence, the national decisions will prevail for them. However, the European Union cannot ignore taxation simply because the fiscal measures taken by the Member States can hamper the mobility of goods, capital and people and they can lead to economic distortions incompatible with the establishment of a unified economic space (Dracea, 2009).

To achieve a balance between the principle of subsidiarity and that of EU intervention, the European institutions have drawn up through the Union's treaties the directions of fiscal policy harmonisation, setting a *new* legal order form for which the States have limited, in more and more extended areas, their sovereign rights and whose subjects are not only the Member States but also their residents, the structure of the tax and fees system being in the foreground. To regulate the harmonisation directions and actions, the European institutions have developed a set of legal rules that constitute what we call EU tax law, whose main characteristic is that it addresses common rules at EU level, applicable with priority to national regulations, leading to a division of the regulatory powers between the EU and the national state, thus bringing into focus a limitation of the Member States' fiscal sovereignty.

Although by accepting the terms and by signing the accession treaties the Member States have accepted in principle the objectives of the EU fiscal policy implicitly renouncing a certain part of their fiscal sovereignty and jurisdiction for the European Union, however, the practice has shown that their governments have acted in some situations reservedly towards the actions aimed at fiscal harmonisation, not being willing to give up their part of expertise in taxation. Based on the substantial differences between the tax systems of the Member States arising from the differences between the economic and social structures specific to them and the conceptual differences on the role of taxation, in general, and of

certain taxes, in particular, fiscal policy continued to be considered as part of the national sovereignty, especially in the field of indirect taxes, where they have benefited from the operation of the unanimity rule.

In general, the new EU member states have different fiscal structures in comparison with the old Member States that collect approximately equal parts of the incomes for the direct taxes, indirect taxes and social insurance, while the new Member States record a lower share of direct taxes of the total budget tax revenue.

Based on arguments, the first fiscal harmonisation efforts were concentrated mainly in the field of indirect taxes, which by their operation form, can create distortions in the functioning mechanisms of the market, directly influencing the free movement of goods and services, but also to eliminate the border controls and to limit unfair competition between the states. By these measures the fiscal sovereignty of the Member States in this field was restricted, giving the impression that direct tax regulation remains a fiscal attribute of the national states.

In order to harmonize indirect taxation, the fiscal strategy of the EU was mainly based on VAT, excise and environmental taxes, a large number of legal basis directives being approved and implemented for each field. From this point of view, in relation to fiscal sovereignty, we witness a transfer of skills for the EU community, which has acquired (Costaș):

- **an exclusive competence** related to the customs, where the Member States do not have the right to charge both intra-Community and international trade, the EU Community being the sole competent to adopt legislation or to conclude international treaties related to the customs;

- **a semi-exclusive or shared competence** between the EU Community and the Member States, as in the case of VAT, where the EU Community law does not allow Member States to maintain or establish any other charge on the turnover, but gives each Member State the choice of the tax rates level which must fall within a minimum and a maximum level, or as in the case of the harmonized excise whose amount should be determined in accordance with a minimum level of excise required by the EU Community directives.

Initially, in the field of direct taxes (profit tax, income tax, etc.), the legal basis in favour of the EU Community action was more limited, also because of the existence of the unanimity rule, which requires that all EU Member States must agree on a EU decision on taxation applicable in a certain case, allowing the Member States to maintain their fiscal sovereignty intact. However, the increasing manifestation of the free movement of persons and capital, the prevention and fight of unfair competition and of tax evasion has imposed the intervention of the EU law also in the field of direct taxes (taxation of branches and subsidiaries located in several Member States and the elimination of the double taxation, the creation of a common system of taxation applicable to mergers, the divisions and contributions to the setting of a company, the taxation of savings and royalties, etc.), thus also reaching the fiscal sovereignty in the field of direct taxes, the tax jurisdiction becoming a shared one between the EU and its Member States.

We must mention as well that in terms of fiscal-budget policy, although all the European treaties define fiscal sovereignty as an exclusive and implicit competence of the Member States, however, certain elements fall within the scope of shared competences, as is the case of budget policy and public debt, where according to the Stability and Growth Pact, the Member States are required to maintain a budget deficit not exceeding 3% of the GDP and a public debt level not exceeding 60% of the GDP.

Therefore we notice that in the case of fiscal sovereignty there is a translation of powers from national to EU level and vice versa, to varying degrees, depending on the limitations that were used by the EU legislation. In principle, *fiscal harmonisation* has involved a compromise between fiscal sovereignty and the functioning of the single market in which all Member States choose to manifest themselves with equal rights in terms of competitiveness.

Related to the fiscal harmonisation process, which was initially viewed as an exercise to bring together the fiscal practices of each State to the EU ones, without the desire to uniform them, there have also appeared views of some experts and politicians expressed in time, and still timely, which are for centralized fiscal policies at EU level, especially for corporate income taxing, claiming that all Member States should align their tax systems to the EU directives, with power to set and levy taxes and not only to make recommendations to the Member States on the fiscal policy measures (Trovato, 2007).

The topic of harmonizing the taxation rates of corporate profits in Europe is a long-discussed and disputed one in the finance ministers of the Member States, which claim that if certain aspects of the national fiscal policies of the Member States will not be harmonized, they will not be able to cope with the

competitive pressure and the market forces within the Union, and the delay of these measures leaves open the world market for certain economies more dynamic and more competitive than the European Union, such as the one of the United States. That is why new decisions should be taken towards unifying the corporate profits taxation rates. In contrast, other official representatives of the Member States, consider, sometimes also under the influence of the emotional factor, that entering a harmonized fiscal system at EU level and in the field of direct taxes, represents giving up an important component of the national fiscal sovereignty.

Several years ago (2004) people debated, also related to the corporate income taxation, the European Commission's conception on the partial harmonisation of only the fiscal bases of corporate income taxation settlement operating within the EU Member States – “The common consolidated tax base” system based on a broad taxation base and on lower taxation rates, as well as on the principles that generate stability and reduce administrative costs, without meaning that all Member States will have the same profit taxation rate, but that the same kinds of resources will be imposed, considering that this type of harmonisation does not affect the independence of the national fiscal policies.

Although there have been views in favour of this system, but also sufficient against it, it did not meet the required consent for its implementation. There have also been voices of certain representatives and of business people's organisations in some Member States, who have said that in addition to a single taxation base, they would also accept a flat tax for all Europe.

The common consolidated taxation base has been defined as the “Trojan horse of Europe” which, once adopted, will allow the Commission to put pressure on the Member States to harmonize the taxation rates. During the debates on the adoption of the Lisbon Treaty, the Irish politicians have argued that the “Common consolidated tax base” system is a violation of the national sovereignty in taxation, and the ultimate goal of the European Commission in implementing this system will be its full harmonisation (of the tax base and of the tax rates). At that time, the UK refused to give the EU more powers in taxation, such as those required by the operation of a common consolidated tax base (Gnaedinger, 2008).

One of the causes of the difficulties in the fiscal harmonisation process in the European Union is the diversity of the fiscal systems of the 27 countries, due to the freedom of movement and location of business. While developed countries have fiscal systems focused on direct taxes, the less developed states, especially the new members, apply fiscal systems focused on indirect taxes and social contributions. These differences can produce distortions in the market, largely generated by the increasing tendency in recent years for fiscal competition practices especially in the field of business and labour taxation, to make their states more attractive for foreign investments.

In conclusion, the fiscal harmonisation process at EU level has been imposed with difficulty encountering a series of obstacles due to the fact that the fiscal policy objectives of the European Community and those of the Member States, although undeclared, are partly different: the European Community aims at achieving the economic and monetary union and a common market to ensure the fundamental freedoms promoted, while the Member States aim to immediately ensure the fiscal resources necessary to fulfil their national responsibilities and to cover the public expenditure.

3. Competition and fiscal harmonisation

Time has shown that due to the increased intense manifestation of the free movement of persons and capital, individuals can choose to work and live in countries in which taxes and fees are lower and in which companies follow the same trend in their desire to reduce the burden of the large fiscal costs.

As a consequence of the world economy globalising process and of the progress made in liberalising trade and expanding capital flows, the movement of goods, services, labour and capital over the natural boundaries have paved the way for the emergence of the fiscal competition phenomenon.

Due to a global competition, the appearance of fiscal competition is the result of the interaction between the freedom of movement of taxation bases across the EU with the concern of the states to maintain or increase the level of domestic investment and to attract foreign investment whose effect is decisive for achieving the budget revenues and the economic growth.

As strategy, fiscal competition aims especially at creating attractive conditions for the location of activities and/or attracting the taxation bases from the entire market by charging low tax rates or by providing more tax incentives, measures which may become effective in the context of the existence of the global market where the tendency of the capital is to locate itself in areas which allow maximizing the gains. The benefits for the countries that offer such a climate will be included in the total of tax revenues on short term and in a high economic growth rate on medium and long term.

But we must also take into consideration the reverse of the fiscal competition effects as in the first stage the governments are encouraged to reduce the tax burden in order to provide opportunities to attract foreign investment or to achieve other objectives of the economic policy, but once the same opportunities become advantageous meanwhile in another state, a shift of the investments towards those areas can occur, and the states may have to face the opposite phenomenon of minimising the taxes owed by taxpayers of slowing down the economic growth and thus the emergence of fiscal deficits.

Fiscal competition largely depends on a state's fiscal strategy on the one hand, and on a taxpayer's fiscal strategy on the other hand, which gives fiscal strategy a dynamic dimension if we consider the response of the states to improve their position in this competition, and a static one, if we consider the taxpayers' option between the competing taxation systems.

In the context of removing the barriers away from the free movement of capital and labour, the European Union best illustrates the effects of competition through taxes and fees, with implications in the taxpayers' behaviour faced with having to choose between the possibilities of avoiding a high taxation in a country by placing the source of taxation in countries with lower taxation levels. Such behaviour was specific particularly to the newcomers to the EU, especially the ones from the former communist bloc.

Furthermore, fiscal competition seen in reverse as being exercised by third countries within the EU, is likely to favour the limiting of fiscal sovereignty. In this situation, we can say that the coexistence of the fiscal sovereignty among the European states, posed in principle, is likely to lead to a fiscal competition that progressively abolishes the fiscal sovereignty, especially when the fiscal competition falls upon the fiscal mobile bases as in the case of company taxation and on dividends or interest rates, etc.

In the case of such taxation categories, each state must make a choice between the absolute maintenance of the fiscal sovereignty and the implicit acceptance of the consequences of a possible fiscal competition, and the restriction of the national fiscal sovereignty prerogatives, which can be achieved by accepting the adoption of certain European Community rules, as a result of the harmonisation process, more or less in correlation with their own objectives.

If we accept that harmonisation is essential within the Union, at the same time we must also accept that the prohibition of any form of competition between states, including the fiscal one, may not be beneficial.

At European Community level, fiscal competition should be addressed in terms of two key factors: ensuring the free movement by displaying the four freedoms of movement in the EU space, and protecting the single market through fair competition policies, and administrative and judicial cooperation. In this context, the lack of coordination between the existing fiscal systems in the European Union can compromise the achievement of the taxation objectives in the Member States.

4. Globalisation and fiscal governance

The fiscal developments in the recent years have been characterized by difficulties in managing the fiscal imbalances with impact on financing the public expenditure which has also made difficult the fiscal administrations' action in the direction of taxation control, with effects on the level of the increasingly lower revenues. These developments were based on several economic and institutional factors whose structure and differentiated action in time and space has contributed to an increase in time of the premises that have created the fiscal and budgetary difficulties which are now underway in several countries including the European Union.

First, it is considered that one of the most recent causes which have led to significant changes in the economic and fiscal behaviour with influences in the occurrence of these difficulties is considered to be globalisation itself addressed in the light of the connections between the main influence factors which have acted in time, such as:

- the change of the role played by the state in influencing the economic activity and the effects of the changes reflected in the tax structure and the amount of the income needed to finance the growth of the public spending;
- the impact of the economic and monetary theories and models on fiscal policy;
- the changes and the trends in the economic structures of the countries with impact on the structure and volume of taxes;
- differentiation of the taxation and national fiscal policies systems that maintain the economic development gaps between states, more in the social, labour and capital movement fields;

- the influence of the fiscal harmonisation process correlated to the subsidiarity principle in the fiscal field and the occurrence of the fiscal competition phenomenon with effects in weakening the budget revenues, through associated income losses;
- the role played by fiscal policy and the policy makers' reactions in the EU and of the national governments to some of these trends and developments.

We are in a period in which the causes of the economic and financial crisis are continuously analyzed, but analysts tend to focus excessively on the present and ignore the developments and transformations that often largely determine the current developments.

A brief outlook on the period of the last two decades despite the increase of the taxation rates and the share of the fiscal revenues in the GDP and despite the demographic changes that led to an increased number of workers and retirees, these revenues were not sufficient to cover the rapid growth of the public spending. Therefore, many countries have started to record fiscal deficits and to accumulate public debt. For the policy-makers, these fiscal deficits were not worrisome, being inspired and encouraged by the Keynesian theories which claim that fiscal deficits contribute to increasing the aggregate demand and hence of the economic growth, often preventing the governments to take the measures that would have reduced the fiscal deficits. For the first 12 member states of European Monetary Union the aggregate debt as share in the GDP increased from 31% in 1977 to 75.4 percent in 1997.

Although in 1997 the European Council adopted the Stability and Growth Pact, as a permanent commitment of budgetary stability, it required from the euro area countries their membership under the financial sanction to two specific fiscal rules regarding the amount of the fiscal deficit of up to 3% and of the public debt of up to 60% of the GDP designed to ensure the budgetary discipline of the Member States to avoid the excessive deficits.

This measure was soon challenged by powerful countries (France and Germany), being considered too strict and they wanted to have more flexibility to increase the public spending, the pact was revised in 2005 the sanctions initially promoted being greatly weakened in order to excuse the fiscal and budgetary escapades of several countries (Tanzi 2012).

Several European countries, starting with France and even Germany have exceeded the allowed deficit of 3%, and that of the public debt, of 60%, contrary to the Maastricht criteria on public debt and budget deficit and the provisions of the Stability Agreement, followed by Italy, Greece, which has hidden the true state of its public finances since its entry into the euro area, Spain, Portugal, Ireland and others, endangering the independence of the European Central Bank (ECB) with impact on the euro stability. For these deviations France and Germany are accused of having contributed to the causes of the financial crisis and of the euro stability.

There have also been significant changes also among the economically advanced countries in the structure of productive, lucrative activities for the investors, but also for the national public budgets. There has also been a significant change in the way goods are produced, the manufactured output has decreased in large units which allow the concentration in a single point of generating high sales and income, their place being taken by small enterprises, more difficult to control in terms of taxation.

Even in the development of online commerce via the Internet, some items of sold goods and services have lost the "tangibility" they had in the past and they have become "virtual," by being produced anywhere in the various jurisdictions, making their taxation place very difficult.

In the recent years the production processes for different spare parts or components of end products were usually produced by an enterprise in a particular country or in a limited geographic area. Nowadays these activities have become multinational, being produced in different countries. The exchanges between the branches of multinational companies that control the global activities, when the capital, the tangible and intangible assets technology and the required management are supplied through the policy of using the transfer prices allocate the profits according to certain planning and fiscal optimization strategies, in many cases lending themselves to fiscal manipulations which aim at reducing the taxes paid in the countries with inconvenient taxation.

All these make difficult the allocation of costs and values contributing to the products to determine the added value for each end product in order to assess the taxation bases for establishing the taxation claims, which is an increasing difficulty for the fiscal administrations.

In this context, some countries with small economies have approached the state produced by globalisation as an easier option than in the past to use a competitive taxation as compared to other states. The shares of some states directed over the years towards fiscal competition have led to being forced to gradually reduce the taxation rates on income from capital sources, while the wage taxation

rates were generally maintained at a high level, leading thus to high costs of labour, with effects on unemployment growth and influencing the changes in employment and in the fiscal systems architecture, but also on budgetary resources distribution.

The fiscal competition practices have put pressure on other countries to reduce the taxation rates on certain income sources, prompting multinational companies to use the freedom to relocate or transfer “fiscally optimised” prices between their branches in several states to report the profits in the countries where they are taxed at lower rates, after having first received the real advantages offered by taxing the productive technical patrimony, of taxing the labour consumption, subsidized prices to utilities and state infrastructure to achieve revenue.

The development and manifestation in the recent decades of a global financial market has enabled the use of money borrowed from banks and other sources outside the country in which the operations occur for internal activities. These loans have become easier to achieve in a common currency area, in case there is no exchange risk and most often the capital inflows in the form of loans are obtained from parties “related” to the same corporations or from the “shadow capital market” located in areas with low taxation and leave little trace on the financial activities through operations in the “tax havens.” In this context, another factor with a significant impact on fiscal revenues and budget imbalances has been developed, represented by the treatment of expenses with interest rates, which has played an important role in the explosion of debt in the recent years, sharply raising the total debt indicators (public and private debt) as share in the GDP leading to the financial difficulties of many countries in the recent years especially among the EMU Member States. The high rates of indebtedness have determined in their turn during the crisis period high rates on the loans from the foreign markets to cover the budget deficits.

It is also interesting to note that many countries where there were financial difficulties had low corporate taxation rates or fiscal incentives that have drastically reduced the effective taxation rates of corporate profits.

Some multinational companies have been structured so that to make extensive use of tax havens and offshore centres as part of their strategy to avoid taxation in the various jurisdictions in which they operate. Regarding this aspect, an estimative study conducted by the OECD in late 2008 shows that in the world's tax havens 5,000-7,000 billion US dollars assets have been attracted.

A report of the British National Audit Office (2008) and the Report of the mandatory deductions (2009) also reveal among other things that almost one third of the 700 largest corporations in the United Kingdom did not pay any tax in 2005 and 2006 and that the largest French corporations currently pay a 8% tax for the average real benefits, even if the official taxation rate is of 33%. Fraud and tax evasion have serious consequences on the budgets of the Member States and on the EU resources system, the estimated costs in the EU amounting to 2.5% of the annual GDP.

Starting with 2000 most countries had to face economic decreases except some growth periods from 2003 to 2006 influenced by the so-called “growth bubble” in some sectors such as the housing or finance ones which in the case of several states have fuelled the growth and prosperity sensation, without applying counter-cyclical measures to cope with the recession which has occurred in some countries since 2006, with low or negative growth rates, which has resulted in many countries in income tax losses, high unemployment rates with pressures on public expenditure and hence on budget deficits.

In recent years, namely in a relatively short period of time there have been changes that have increased the role and power of the state in the economy under the influence of the financial crisis; many states have made large expenditures to support the banks and to prevent the economic depression. In 2009 (compared with 2006 in brackets), public expenditure reached as a percentage of the GDP 54.2 (48.6) in Belgium, 58.6 (51.6) in Denmark, 50.4 (43.2) in Greece, 55.6 (52.7) in France, 51.9 (48.7) in Italy, 49.8 (52) in Hungary, 51.6 (45.5) in the Netherlands, 51.8 (49, 5) in Austria, 51 (49.5) in Portugal, 55.6 (46.3) in Finland, 51.7 (44.1) in the UK (Croitoru, 2010).

In some states, considered as extreme cases, the revenue losses were of 7.6 and 6.6% of the GDP as it was the case in Iceland and Spain and of 4% in Ireland, Portugal and Britain.

Not only have the evolutions above-mentioned reduced the tax revenue, but they have also damaged their distribution for certain countries, and they have probably contributed indirectly to the financial crisis and high budget deficits, if not in the European Union, then for each member state.

In the context of approaching the cause and effects of the financial crisis that has also triggered the public debt crisis rapidly propagated across the EU, we have noticed that although the effects of globalisation offer important insights for certain countries, in others it can also have negative effects socially and economically, and in case of economic disruption and structural imbalances, especially if

accompanied by fraud and tax evasion, the countries may become more vulnerable, the national budgets and the fiscal systems are increasingly threatened.

Since globalisation with its positive and negative aspects cannot be avoided in a context in which money flows freely, international tax havens and financial centres which are not regulated enough and refuse to accept the principles of transparency and exchange of information, they can facilitate or even encourage fraud and tax evasion, reaching the fiscal sovereignty of other countries by undermining tax revenues in the EU bodies, an issue regularly raised in international discussions was brought up, namely that of the necessity of establishing international cooperation in the fiscal area and certain common standards by promoting a “good governance in fiscal matters,” which aims at putting in balance the fiscal sovereignty of the countries and the legitimate protection of their income tax.

Promoting a good governance in the fiscal area on a geographical basis as wide as possible is currently recognized as an appropriate way to address the concerns of the EU and of its Member States facing major challenges in addressing the effects of the current economic and financial crisis which has highlighted the concerns related to the sustainability of the fiscal systems in the context of globalisation.

At the initiative of the G20 countries as a result of the conclusions concerning the uncooperative fiscal jurisdictions that have agreed to focus their efforts on the international application of the transparency rules in financial matters and on administrative cooperation in fiscal matters, the EU Council of Finance Ministers (ECOFIN) has defined for the first time the fiscal governance in its Conclusions of 2008 as meaning the principles of transparency, information exchange and fair fiscal competition.

These concerns have been extended and continued in the subsequent years, in 2011 the European Parliament adopted two resolutions on improving the fiscal governance according to which the EU should establish the Financial Transaction Tax to reduce fraud in the financial sector, tax evasion and harmful taxation practices and to adopt measures to generate revenue growth in the European countries and in the developing states and to ensure the application of fair treatment in the business environment and the creation of an adoption framework of the adequate measures when appropriate for the Member States through administrative cooperation and mutual assistance in order to recover the taxes, all these also in order to achieve the wider objective of consolidating and streamlining the European single market.

Although during the last decade, the Member States agreed on certain common mechanisms to tackle the issue of the taxation bases erosion and of the distortions created by the fiscal competition, related to the distribution of investments in the last period they have admitted that only the national and bilateral measures, taken separately, can solve only partially these problems and they agreed upon the vital cooperation of the whole EU.

In this respect, they have agreed that together with the third countries to collaborate in order to encourage and to support the efforts that began to be taken in the direction of a greater acceptance of the international standards in the field of fiscal cooperation and on a number of complementary measures and initiatives in the field of financial regulation meant to promote a better governance in the fiscal matters, aiming at: administrative cooperation, including the exchange of information; ensuring an effective cross-border cooperation; rules of conduct to eliminate harmful fiscal competition; fighting tax evasion and fraud, fighting against money laundering as product of organized crime, of terrorism and of corruption; promoting transparency principles also in the third countries, the removal of the fiscal cross-border obstacles; mutual assistance in recovering the tax debts, mutual assistance in the collection of taxes and taxation of savings income as well as in eliminating the competition in terms of taxation of enterprises, etc.

To achieve these objectives, the EU bodies have developed a legal and regulatory framework by developing a series of directives or codes of conduct covering every area in the field of institutional and fiscal cooperation.

At the EU summit in January 2012, the EU leaders reaffirmed their determination to overcome the difficulties caused by the current crisis, indirectly acknowledging that many cases are due to the lack of budget and fiscal policy coordination and they established a new inter-governmental agreement by the “Treaty for stability, coordination and convergence in the EU” applicable in 2013, known as the “Fiscal Pact.” The treaty establishes a threshold of 0.5% as the limit of the structural budget deficit and in case the public debt is significantly below 60% and there is no risk concerning the long-term sustainability of public finances, this structural deficit may reach approximately 1% of the GDP. The maximum cyclic budget deficit plus the structural one will fit in the 3% of the GDP limit. The application of the Fiscal Pact provisions also involves the supervision of the Member States budgets by the European bodies and the roughening of the penalties for the states that do not comply with the indebtedness limits.

The new treaty requires strengthening the Union's competences of "strategic management" for the economic development and also a greater fiscal discipline and a careful control of the national budgets taking a new step in the integration of the EU economic policies by increasing the harmonisation of the EU policy and of the European institutions control in order to coordinate and unify the taxation policies.

5. Conclusions

The construction and membership to the EU market has required for each Member State the covering of a period characterized by profound changes of the economic system and legislative harmonisation practices by making compatible the national legal norms with direct impact on the economic field, of the budgetary and taxation policy, thus instituting a new form of legal order for which the Member States have limited their sovereign rights in increasingly extensive areas.

A strict appreciation of the fiscal policy evolution in the European Union allows us to consider that the results of the harmonisation and fiscal coordination process in the EU reveals that although this issue has been discussed for some time, having a fiscal strategy with common goals, it neither resulted in a total elimination of the fiscal barriers, nor in a unification of the taxation rates, both because of the economic disparities between the Member States, but also because of the different perceptions of the interest for the construction of the budget in Europe by the political class from each Member State, using even more their fiscal sovereignty powers.

In order not to disrupt the functioning of the single European market, the coordination of the fiscal implications actions must be designed so that the national fiscal systems are as neutral as possible and not resort to acts of disloyal fiscal competition. Therefore any difficulties and challenges of the fiscal harmonisation process should be offset by promoting a long term clear and coherent fiscal strategy to ensure stability, coherence and consistency of the legal framework, also by reducing bureaucracy and promoting transparency and public consultation of the Member States.

The concern of the Member States to improve their position of "attractive area for investment" as result of managing the fiscal competition can determine the action directed towards fiscal harmonisation to be put on the second place and the free expression of the fiscal sovereignty, may, legitimately, lead to the adoption of certain fiscal rules that may favour some fiscal competition practices. Such actions do not generate real economic change, do not create added value in the region in which those states operate, they simply attract activities and tax revenues from other countries to channel them towards their own budgets.

Through the different level of enforcement varying from country to country within the European Union, multinational companies can use a complete set of fiscal optimisation strategies which allow the transfer of profits in the areas with a low taxation rate or more by locating the financial offices in areas recognized as tax havens by using the interference between the different legal and fiscal rules from the national, international and EU law systems.

The growth of the state's role has increasingly become a feature of modern civilisation and it has triggered a more intense taxation and the expansion of tax payers control, causing the outbreak of a potential resistance to tax of taxpayers through various methods and behaviours of tax avoidance, by the aggravating forms of tax evasion and fraud, sometimes crowned with success, whose effect is disastrous for the public budgets.

The actions taken at EU level in the field of fiscal policy harmonisation should not be oriented only towards eliminating the traditional forms of double taxation, but also towards more complex actions that involve an adaptation of the economic and fiscal policies to action for the factors influencing the changes within the society in economic and social terms, but also on the possibility for the states to balance the necessary budget financial resources and the public expenditure involved.

The changes that have occurred in the recent years, largely generated by the effects of globalisation, require greater cooperation across the EU and its Member States in the field of economic reforms and of fiscal policy, through the application of common standards covering fiscal competition, international tax evasion, substantiating the annual budget, managing the budget deficits, fiscal transparency, exchange of information between the Member States and beyond, so that all these goals are now part of a new concept of taxation in the Union, namely that of "good fiscal governance."

The approaches of fiscal policy from the recent years increasingly highlight that by instituting certain measures to establish a better fiscal governance in the EU and the inevitable accession to the treaties and regulations initiated in the EU, especially if we consider the provisions of the last treaty (the Fiscal Pact), they amount to a radical change in the fiscal and budgetary policy status in the European Union, which far exceeds the powers of the Member States' fiscal sovereignty. Thus, the fiscal policy is

increasingly becoming an exclusive competence of the Member States, a shared competence, thus creating the conditions for the centralization of taxation in the EU bodies and thus giving up the fiscal sovereignty prerogatives.

6. References

- Costaş C. (2006), *Reflections on the fiscal sovereignty of the Member States*, Study Iurisprudenția Magazine issue no. 2/2006, Babes-Bolyai University, Cluj-Napoca
- Croitoru L. (2010) *A false problem: Compromise between external constraint and social imperatives*, Conference “Romania 2010: Between financial constraints and social imperatives,” NBR
- Drăcea M, Sichega F., *Considerations on fiscal policy in the European Union*, “Finance – future challenges” Magazine, 5th year, Issue no.5/2006, p. 86
- European Commission (2009), *Taxation trends in the European Union*, Office for Official Publications of
- Gnaedinger, C. (2008). *News Analysis: CCCTB Opponents Stake Out Different Positions*, White & Case
- Greenspan, A. (2008) *The Age of Turbulence*, Public Publishing House, Bucharest
- <http://eur-law.eu/RO/Avizul-Comitetului-Economic-si-Social-European-privind-Comunicarea,462771,d>
- Krugman, Paul (2008), *The return of the decline economy and the 2008 crisis*, Public Publishing House, Bucharest
- Tanzi V. (2012) *Role of Taxation in the Fiscal Imbalances and in their Consolidation*, Forum “Tax Policy under a Common Currency”, organized by the General Directorate for Taxation and Customs Union of the European Commission, Brussels. http://ec.europa.eu/taxation_customs/taxation/gen_info/tax_conferences/tax_forum/index_en.htm
- the European Communities, Luxembourg, http://ec.europa.eu/taxation_customs/resources/documents/taxation/gen_info/economic_analysis/tax_structures/2009/2009_main_results_en.pdf
- Trovato, M. (2007), *The Threat of Fiscal Harmonisation*, Liberales Institut Paper, p. 2
- ***Approval of the Economic and Social European Committee on the Communication from the Commission to the Committee, the European Parliament and the Economic and Social Committee “Promoting Good Governance in Fiscal Matters” COM (2009) 201 final
- <http://www.bnr.ro/PublicationDocuments.aspx?icid=8160>
- http://www.tlegal.eu/publikacje/international_bar_association/21122008_ccctb.pdf

FIABILITY OF PIVOT POINT INDICATOR

CIUDIN Adrian

Ph. D. Student, Faculty of Economics/Department of doctoral studies, Lucian Blaga University of Sibiu, Sibiu, Romania, famciudin@gmail.com

VASIU Diana

Ph. D. Student, Faculty of Economics/Department of doctoral studies, Lucian Blaga University of Sibiu, Sibiu, Romania, diana.vasiu@yahoo.com

Abstract: *This paper presents technical analysis of the financial market in order to forecast market trend. In order to determine Pivot Point Fiability EUR/USD quotes for 2261 days were analysed. Pivot Point is a reliable indicator and can consider it when taking market decisions regarding entering and closing positions. The first time a pivot point or support / resistance level is broken is the most important. It can set the tone of the upcoming action. Based on historical dates analysis, from the previous day calculated on Pivot Point, it is possible to predict the open price of current day market, as shown and demonstrated in this paper.*

Key words: fiability, pivot point, financial market

JEL classification:G 17

1. Introduction

Financial market had developed in the past decades worldwide, including goods and financial instruments, but one of the more important targets for all the times is how to predict market movements. In this regard technical analysis and its indicators like Elliott Wave, Fibonacci Retracement, Bollinger Bands etc. are widely used. Among them Pivot Point is the most predictive and trusted by flow brokers and traders. Pivot points are derived from a constant formula, that's make them an objective tool.

A pivot point is a price level that is used by traders as a predictive indicator of market movement. Professional traders and market makers use pivot points to identify potential support and resistance levels. Pivots give an idea to traders where price movement can possibly change [1].

In order to calculate a pivot point an arithmetic average of significant price is needed according to Wikipedia: *H* (high), *L* (low) and *C* (closing) price of the market.

$$P = \frac{(H + L + C)}{3} \quad (1)$$

According to Wikipedia, sometimes, the average also includes the previous period's or the current period's opening price (*O*):

$$P = \frac{(O + H + L + C)}{4} \quad (2)$$

In other cases, traders like to emphasize the closing price,

$$P = \frac{(H + L + C + C)}{4} \quad (3)$$

or the current periods opening price,

$$P = \frac{(H + L + O + O)}{4} \quad (4)$$

If the market in the following period trades above the pivot point it is usually evaluated as a bullish sentiment, whereas trading below the pivot point is seen as bearish [1].

Resistance is above the market where prices should stall. Or, if broken, prices should continue up. Support points are below the market where prices should hold [3]. Or, if broken, prices should fall farther. The inner or closer support and resistance levels are called “S₁” and “R₁” respectively. They are calculated as follows:

$$S_1 = (PP \cdot 2) \tag{5}$$

respectively

$$R_1 = (PP \cdot 2) \tag{6}$$

The outer support and resistance levels are called “S₂” and “R₂” respectively. They are calculated as follows:

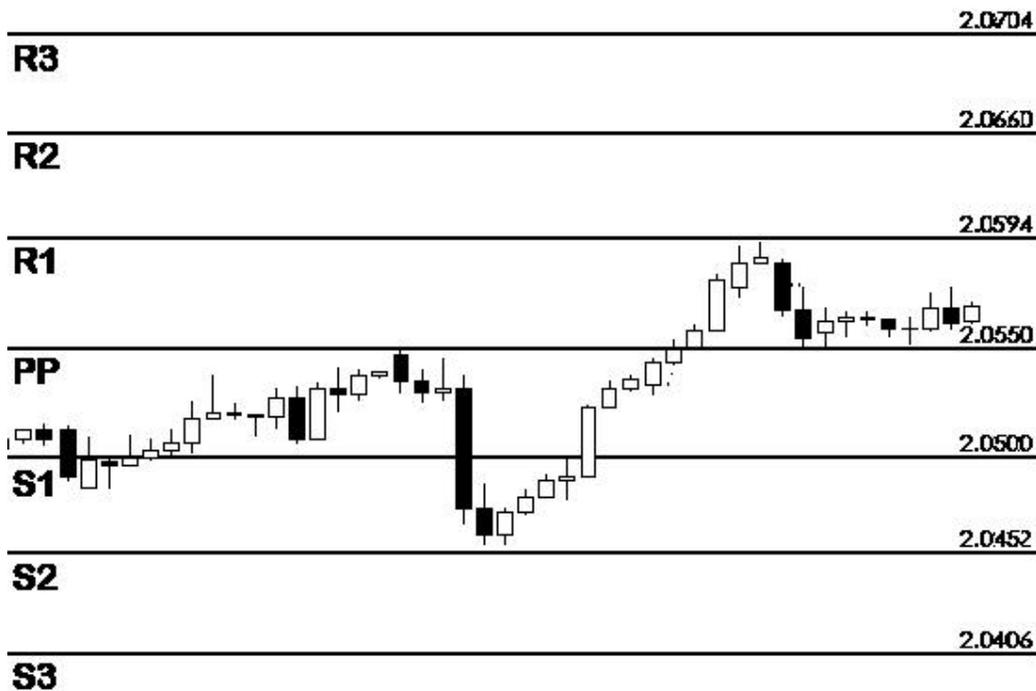
$$S_2 = PP - (R_1 - S_1) \tag{7}$$

and

$$R_2 = PP + (R_1 - S_1) \tag{8}$$

These levels should mark inner and outer levels of key support and resistance [3].

Figure 1: Graphical Representation of Pivot Point Indicator



Source: Metatrader

The first time a Pivot Point or support / resistance level is broken is the most important. It can set the tone of the upcoming action. A wide-range break above or below Pivot Point, S₁, S₂, R₁ or R₂ signifies a more likely continuation of the breaking action. Further, these levels can lose their significance the more times they are crossed during the day.

2. Fiability of Pivot Point

In order to determine Pivot Point Fiability EURUSD analysed quotes for 9.05.2002-28.01.2011 period (2261 days).

Open, Close is price at which market opened and closed in the current day

Open (Close) = -1, price is under Pivot Point level;

Open (Close) = 1, price is above Pivot Point level.

Table 1: Repartition of (Open/Close) prices compared to Pivot Point

Open	Close			Close %			Open %
	-1	1	Total	-1	1	Total	
-1	642	432	1074	60%	40%	100%	48%
1	435	751	1186	37%	63%	100%	52%
Total	1077	1183	2260	48%	52%	100%	100%

Source: Table built with data from EURUSD quotes for 9.05.2002-28.01.2011 period (2261 days).

The data from Table 1 shows us that if the market opens under P, the probability that it will close under P is 60%. If the market opens above P, then the probability that it will close above is 63%. The percentage for Open and Close compared to Pivot point is the same, respectively 48% and 52%.

Figure 2: Graphical Representation of Pivot Point Indicator

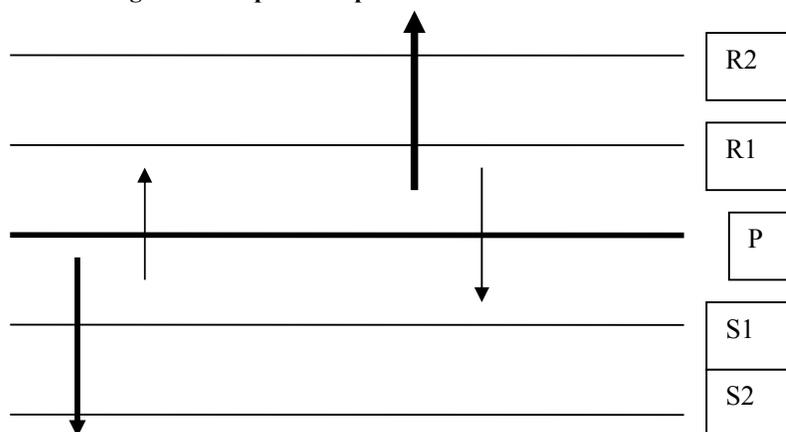


Table 2: Price repartition compared to R₁ and S₁

Open	R ₁ -C		S ₁ -C		Close		
	-1	1	-1	1	-1	1	Total
-1	-1	-1				213	213
	-1 Total					213	213
	1	-1	394	219	613		
	1 Total		248	219	861		
-1 Total			642	432	1074		
1	-1	-1				315	315
	-1 Total					315	315
	1	-1	230	436	666		
	1 Total		205	436	871		
1 Total			435	751	1186		
Total			1183	1077	2260		

Source: Table built with data from EURUSD quotes for 9.05.2002-28.01.2011 period (2261 days).

Note: $R_1 - C = -1$ if $Close > R_1$; $R_1 - C = 1$ if $R_1 > Close$

If open price is under Pivot Point, from 1074 of cases it will close above R₁ in 213 (20%) of dates, in all other cases 861 (80%) it will close under R₁, from which 248 – under S₁, 394 – between P and S₁, 219 – above P and under R₁

If open price is above Pivot Point level, from 1186 cases the price will close 436 between Pivot Point and R₁, 205 it will close under S₁, 230 times it will close between Pivot Point and S₁, 315 above R₁

Considering above, if the market opens above Pivot Point level, in 981 (83%) cases it will close above S_1 and in 205 (17%) it will close under S_1 .

In this case it can be concluded that if the market opens above Pivot Point level it is reasonable to enter a long trade (Buy) EURO/USD with a stop loss under S_1 level. If the market opens under Pivot Point level – enter a short trade (Sell) EURO/USD with a stop loss above R_1

3. Data analysis when Open price is above Pivot Point

Data presented in Table 3 shows that in 1178 cases when Open price is above Pivot Point 776 times (66%) the price did not broke throw S_1 , meaning that the assumption to place a stop-loss at this level is justified.

If the price went above R_1 , in 87 cases it closed under P, from which 59 with a minimum price under S_1 and 28 cases above S_1 .

Table 3: High, Low and Close data distribution compared to S_1 when open price is above P (open=1)

			L- S_1			L- S_1			Total
			Close= -1		-1 Total	Close= 1		1 Total	
H- R_1	H- R_2	Data	-1	1		-1	1		
-1	-1	Count	250	77	327	25	207	232	559
		Sum of C-O	-2.3236	-0.3606	-2.6842	-0.0078	-0.0532	-0.061	-2.7452
		Sum of H-O	0.4468	0.1985	0.6453	0.0501	0.6565	0.7066	1.3519
-1 Count			250	77	327	25	207	232	559
-1 Sum of C-O			-2.3236	-0.3606	-2.6842	-0.0078	-0.0532	-0.061	-2.7452
-1 Sum of H-O			0.4468	0.1985	0.6453	0.0501	0.6565	0.7066	1.3519
1	-1	Count	59	28	87	27	226	253	340
		Sum of C-O	-0.4192	-0.133	-0.5522	0.0652	0.7854	0.8506	0.2984
		Sum of H-O	0.2927	0.2205	0.5132	0.145	1.7054	1.8504	2.3636
	1	Count	19	2	21	22	236	258	279
		Sum of C-O	-0.1386	-0.0058	-0.1444	0.1462	2.3008	2.447	2.3026
		Sum of H-O	0.1409	0.0168	0.1577	0.2002	3.1401	3.3403	3.498
1 Count			78	30	108	49	462	511	619
1 Sum of C-O			-0.5578	-0.1388	-0.6966	0.2114	3.0862	3.2976	2.601
1 Sum of H-O			0.4336	0.2373	0.6709	0.3452	4.8455	5.1907	5.8616
Total Count			328	107	435	74	669	743	1178
Total Sum of C-O			-2.8814	-0.4994	-3.3808	0.2036	3.0330	3.2366	-0.1442
Total Sum of H-O			0.8804	0.4358	1.3162	0.3953	5.5020	5.8973	7.2135

Source: Table built with data from EURUSD quotes for 9.05.2002-28.01.2011 period (2261 days).

Note: $H-R_1=-1$, if $H<R_1$; $H-R_1=1$ if $H>R_1$. The same is for $H-R_2$, Close if $L-S_1$

Profit at the close of the market (D_c) is determined as a sum of the differences between Close price (C) and the open price of the current day (O) multiplied by the value of one point (1pip=\$10000).

$$D_c = \sum(C_i - O_i) \quad (9)$$

Maximum profit estimated (D_h) is the amount accumulated between High and Open price

$$D_h = \sum(H_i - O_i) \quad (10)$$

In this case $D_c=3.0330$ and $D_h=5.5020$

Accumulated variation amount (D) between the open price and S_1 is 2.5716 in a total of 402 cases (328+74). From the above it can deduct that if buy at the open of the market when the price is above P with a stop loss under S_1 the maximum fiability is:

$$F_m = D_h/D = 2.14 \text{ (214\%)}$$

In case buy position it is closed at the market closer, the fiability would be:

$$F_c = D_c/D = 1.18 \text{ (118\%)}$$

4. Data analysis when Open price is below Pivot Point

Data presented in Table 4 shows us that in 1074 cases when Open price is below Pivot Point 681 times (63%) the price did not broke throw R_1 , meaning that the assumption to place a stop-loss at this level is justified.

If the price went below S_1 , in 107 cases it close above Pivot Point, from which 74 with a maximum price above R_1 and 33 cases below R_1 .

Table 4: High, Low and Close data distribution compared to S_1 when open price is below P (open=-1)

			H- R_1			H- R_1			Total
			Close -1		-1 Total	Close 1		1Total	
L- S_1	L- S_2	Data	-1	1		-1	1		
-1	-1	Count	187	27	214	2	10	12	226
		Sum of O-C	2.0711	0.1401	2.2112	-0.0069	-0.1001	-0.107	2.1042
		Sum of O-L	2.7777	0.2047	2.9824	0.0202	0.0472	0.0674	3.0498
	1	Count	199	30	229	31	64	95	324
		Sum of O-C	0.6808	0.0616	0.7424	-0.105	-0.5389	-0.644	0.0985
		Sum of O-L	1.6023	0.1578	1.7601	0.1873	0.3341	0.5214	2.2815
- 1 Count			386	57	443	33	74	107	550
-1 Sum of O-C			2.7519	0.2017	2.9536	-0.1119	-0.639	-0.751	2.2027
-1 Sum of O-L			4.38	0.3625	4.7425	0.2075	0.3813	0.5888	5.3313
1	1	Count	177	22	199	85	240	325	524
		Sum of O-C	-0.0175	-0.0141	-0.0316	-0.4045	-2.2454	-2.65	-2.6815
		Sum of O-L	0.6776	0.0655	0.7431	0.22	0.4601	0.6801	1.4232
1 Count			177	22	199	85	240	325	524
1 Sum of O-C			-0.0175	-0.0141	-0.0316	-0.4045	-2.2454	-2.65	-2.6815
1 Sum of O-L			0.6776	0.0655	0.7431	0.22	0.4601	0.6801	1.4232
Total Count			563	79	642	118	314	432	1074
Total Sum of O-C			2.7344	0.1876	2.922	-0.5164	-2.8844	-3.401	-0.4788
Total Sum of O-L			5.0576	0.428	5.4856	0.4275	0.8414	1.2689	6.7545

Source: Table built with data from EURUSD quotes for 9.05.2002-28.01.2011 period (2261 days).

In this case $D_c=2.7344$ and $D_h=5.0576$

Accumulated variation amount (D) between the open price and R_1 is 2.3974 in a total of 393 cases (314+79). From the above it can deduct that if to sell at the open of the market when the price is below Pivot Point with a stop loss above R_1 the maximum fiability is:

$$F_m = D_h/D = 5.0576/2.3964 = 2.11 \text{ (211\%)}$$

In case the closer sell position at the market close, the fiability would be:

$$F_c = D_c/D = 2.7344/2.3964 = 1.14 \text{ (114\%)}$$

5. Conclusions

Historical data analisys presented allow to conclude that prices tend to go up when opens above Pivot Point and go down when opening below this level with a probability of 60%. Also with this indicator can determin the levels where it place stop-loss and take-profits. Studies on Pivot Point, Support S_1 and Resistnace R_1 levels are of a great importance when anticipating market movment. The 60% accuracy only wiht this one indicator is very suggestive.

Paper presents only the price movment compared to previos day Pivot Point calculations. A great interest would present to calculate this indicator on a weekly data, comparison of weekly PivotPoint and daily Pivot point, and their corelation, price movement betwin weekly and daily Pivot Points, but this will be presented in a futures paper.

In order to increase the probability of profitable trades it is recommended to compare trade signals with other technical analysis indicators, such as MACD, Stochastic, Fibonacci levels, Elliot wave, Bollinger Bands. Also needed to consider risk management, portfolio calibration, maximum open position according to the account level.

6. References

- www.forexmarketscience.com
- www.wikipedia.org
- Stafford, L. H. (2006), Daytrading Secrets, *Futures Truth Magazine*, Issue 6

THE BALANCE SHEET – INFORMATION SYSTEM IN THE FINANCIAL DIAGNOSIS

CIUHUREANU Alina Teodora

**Ph. D. Assistant professor, Faculty of Economics, Romanian-German University, Sibiu, Romania,
alinaciuhureanu@yahoo.com**

Abstract: *Financial statements are a basic element of the accounting information system because they represent the fundamental communication means of information towards users. The balance sheet, an element of the financial statements, reflects the financial position of the entity influenced by controlled economic resources, the financial structure, the company's liquidity and solvency; the information is useful to anticipate the company's ability to generate future cash flows, to anticipate future credit needs and the possibility of obtaining these loans, the way profits and future cash flows are distributed, to anticipate the company's ability to meet due financial commitments. From this perspective, the paper shows the main indicators that can be built based on the balance sheet and the usefulness of knowing them within the entity.*

Key words: balance sheet, rate, financial diagnosis

JEL classification: G 32, M 41

1. Approaches on the balance sheet as part of the financial statements

Financial statements are a basic element of the accounting information system because they represent the fundamental communication means of information towards users. Therefore, according to the provisions in our country, the information concerns:

- a. *the assets*, namely the resources controlled by the company as a result of certain past events and which are expected to generate future economic benefits for the entity;
- b. *the liabilities*, as current obligations of the company deriving from past events and whose clearing is expected to result in an outflow of resources embodying economic benefits;
- c. *shareholders' equity*, as residual interest of owners in the entity's assets, after deducting all their liabilities;
- d. *incomes and expenses, including earnings and losses*;
- e. *cash flows*, respectively inputs and outflows of cash and cash equivalents of the entity.

Financial statements are a structured representation of the financial position and of an entity's financial performance. According to IAS 1 "Presentation of financial statements", "*the objective of the financial statements is to provide information on the financial position, financial performance and cash flows of an entity, useful to a wide range of users in taking economic decisions. The financial statements are also the results of management of resources, a task entrusted to the management of the entities.*"

The financial statements prepared for this purpose meet the common needs of most users. They are in condition to obtain information on:

- *the financial position* (the relationship between the company's assets, liabilities and equity, as reported in the balance sheet), influenced by the controlled economic resources, financial structure, the company's liquidity and solvency; the information is useful for anticipating the company's ability to generate future cash flows, anticipating future credit needs and the possibility of obtaining these loans, the way profits and future cash flows are distributed, to anticipate the company's ability to meet due financial commitments;
- *the financial performance* (the relationship between the company's incomes and expenses, as reported in the profit and loss account) which aims the evaluation of possible changes of economic resources that the company may control in the future, formulation of judgements regarding the efficiency of using certain resources;
- *the change of financial position* concerns the analysis of operating, financing and investment activities.

In the new stage of development of the Romanian accounting system and in the spirit of international harmonization process of information from accounting documents, a comprehensive set of the financial statements was adopted (prepared by the legal entities that at the date of the balance sheet exceed the limits of two from the following three criteria: total assets: 3.650.000 euro; net turnover:

7.300.000 euro; average number of employees during the financial year: 50) with the following components:

- a. Balance sheet;
- b. Profit and loss account;
- c. Statement on equity changes;
- d. Statement on cash flows;
- e. Annotations to the annual financial statements.

The legal entities that do not exceed two of the mentioned criteria, prepare simplified annual financial statements including:

- a. Short balance sheet;
- b. Profit and loss account;
- c. Annotations to the simplified annual financial statements;

If we consider the provisions of IAS 1 “Presentation of financial statements”, the complete set of financial statements includes:

- a. a statement of the financial position at the end of the period;
- b. a statement of the overall income for the period;
- c. a statement of changes in equity for the period;
- d. a statement of cash flows for the period;
- e. statements including a summary of the most important accounting policies and other explanatory information; and
- f. a statement of the financial position from the beginning of the earliest comparative period, when the entity applies an accounting policy retrospectively or makes a retrospective restatement of the elements from its financial statements or when it reclassifies the elements in its financial statements.

Professor Schmalenbach introduced *the concept of balance sheet as an image of the company's forces*, noting that it is more important for managers to measure the health of the company than to measure the value of its assets and liabilities. Balance sheets began to be drawn with the emergence of accountancy as practical discipline and it arrived at the same time with the transformation of accountancy into applied science. Initially, the balance sheet played the role of a “general account”, but, as the accounts' system developed, it became an individual separate procedure, specific to the accounting method.

Etymologically, the word “balance sheet” comes from the Latin word “bi-lanx”, which means “with two plates” or “billancium”, which means weighing scale.

The balance sheet is defined as the summary accounting document which presents the assets, liabilities and equity of the entity at the end of the financial year, as well as the other statements provided by law (*liquidation, mergers, closure of activity, etc.*)

Over the years, several approaches and patterns of the balance sheet have been outlined, such as: *the patrimonial approach*, *functional approach* (aims to make the balance sheet answer a dynamic analysis, allowing the investigation of the activity on operation cycles and taking into consideration each and everyone's role in the operation of the company), *the financial approach* (it assumes ordering assets from liabilities on terms of liquidity, i.e. enforceability, the two parties reflecting short or long-term financial equilibrium), *the approach of Anglo-Saxon conception* (it excludes patrimonial judgements and considers the balance sheet as a summary document presenting the financial statement of the company at a given time, including three mass values: assets, liabilities and shareholders' equity).

Currently in our country, the **vertical or list balance sheet scheme** is used, oriented with a predilection for such *liquidity-solvency* analyses, which is reinforced by the separate presentation of current and long-term liabilities, by the way managers want to classify investments as long-term investments or short-term investments. *It provides information on the nature and the amounts invested in the company's assets, its obligations towards creditors, and also the owners' share in these resources.* This type of balance sheet supports the preparation of cash flows by presenting the claims and liabilities according to their maturity, which allows determining relatively easily the flow of receipts and payments from the current year. However, this type of balance sheet does not explain the variation of the company's cash flow either.

The importance of the balance sheet in the theory and practice of accountancy consists of the *functions* it fulfils in the knowledge and information process:

- a. *summarization and generalization function*, the balance sheet representing one of accountancy's finality;
- b. *control and analysis function* is manifested in tracking and interpreting process of achieving the established objectives, of employing and using the available resources. The information is used in the financial-accounting analysis;
- c. *information function*, which allows users to form an overall image of the company, determined by its real, exact, correlated, compared and legal character of the information included in the balance sheet;
- d. *forecasting function*, manifested by the post-factual representation of the business as prerequisite for establishing forecasts regarding the evolution of phenomena. Forecasted calculations on the activity for the future period, on how production factors ensure more efficient tactical and strategic decisions.

As information document, the balance sheet has however certain *limitations*, consisting of:

- *the absence of certain balance sheet items that would reflect internal resources created by the company* and to which accounts cannot be assigned, such as the intellectual capital;
- *evaluation of balance sheet items based on historical costs* raises certain issues related to the veracity of the financial statement at the end of the financial year;
- *changes in the money supply during inflation diminishes public confidence in the relevance of the balance sheet* ;
- fluctuation of the activity between the accounting circuit for closing a financial year and that of opening a new one *is not expressed in the balance sheet*;
- *influence of external, non-monetary factors* on the company's activity *is not listed in the balance sheet*

2. Indicators used in the financial diagnosis based on the balance sheet

2.1. Structure rates of assets, liabilities and shareholders' equity

Rates on the asset structure set the percentage of each item or group of items of assets in the balance sheet in the total assets, giving the possibility to express the balance sheet in percentages. The importance of the approach consists of the fact that it allows the identification of major characteristics of the balance structure and it provides information regarding the most important evolutions in time. The rates on the asset structure are the simplified expression of the company's productive structure.

We mention that the structure can be determined for any type of asset, depending on the components, in order for managers to have a more complex overview on the competence of owned assets. For example, the rate of stocks may be thoroughly considered on types of stocks, i.e. the rate of raw materials, rate of supplies, rate of products, etc.

A. Rate of fixed assets reflects the degree of capital investment in the company. In order to be relevant, it is important that this rate is developed in the financial management.

a. *Rate of tangible fixed assets* reflects the company's investment policy in tangible assets. The size of the indicator depends on the nature of the activity, being much higher for heavy industry which requires lower technical endowment. For the companies in the same area of activity, the rate depends on the strategic options, on the development policy, the real conditions in which it operates. For a particularization of tangible assets, managers may also establish their structure.

b. *Rate of intangible fixed assets* reflects the company's investment policy in intangible assets. The size of the indicator depends on the nature of the activity but also on the importance managers give to fixed assets for future development strategies.

c. *Rate of fixed financial assets*, expresses the intensity of connections and financial relations established by the company with other entities, reflecting the company's financial investment policy. The level of the indicator is closely related to the size of the company and its financial policy, having extremely high values for holdings.

B. Rate of current assets reflects the percentage of current assets in the total assets. The values of the indicator depend on the company's filed of activity. In the decision process, the financial management would have to consider the analytical rates regarding current assets.

a. *Rate of stocks*, reflects the percentage of stocks in the total of current assets. The situation can be considered normal if stocks do not exceed 50% of the total of current assets, but the level of this indicator depends also on the company's field of activity. The interpretation in time of stocks is the correlation with the turnover. Normally, the turnover index should exceed the stocks' index, and the renewal period of stocks from the turnover should be minimal. In its turn, the rate of stocks can be divided into analytical rates, in relation to the nature of stocks;

b. *Rate of receivables* reflects the percentage of receivables in the total of current assets, i.e. the company's commercial policy. The rate has insignificant or zero values for the companies that have direct contact with customers paying in cash and higher values for inter-companies relations. If, dynamically, the rate has an increasing tendency, then the percentage of receivables increases as a result of the modification of their value in a greater proportion than that of current assets, a favourable situation if it has a rotation speed higher than that of the basic period. If, during the dynamics, the rate has a decreasing tendency due to the modification of their value in a smaller proportion than that of the current assets, it is a favourable situation if it is the result of a higher turnover, with the same effect of acceleration of the rotation speed as compared to the basic period.

c. *Rate of short-term financial investments and cash availabilities*, reflects the percentage of liquidity in the total of current assets. High level outlines a favourable situation in the theory of financial equilibrium, if their level exceeds the level of current debts. Otherwise, the company calls on current bank loans to finance operation needs. However, a high value may also mean having inefficiently used resources.

By **analysing the structure of debt and equity**, the main financial strategies and policies of the company are tried to be evaluated, regarding the way financial resources are formed on types of sources (own, borrowed and attracted) and on terms of enforceability (short, medium and long).

a. *Rate of financial stability*, reflects the average of permanent capital in the total of resources. The supremacy of permanent capital in the financial resources reflects the permanent character of the activity's financing, offering high security through stability in financing. The minimum value that gives an acceptable stability to the companies is of minimum 50%.

b. *Rate of current resources* (current funding level), reflects the extent to which current resources participate in creating total resources. It is advisable that the maximum value does not exceed 50% of the total resources because it would otherwise compromise the financial stability and the company's level of indebtedness.

c. *Percentage of current resources* in the stable resources reflects the extent to which the company uses the two types of resources to finance utilities. The index is compared to the type of needs to be financed which results depending on the type of activity and in the interpretation, the financial management has to take into consideration the financial stability, i.e. the current funding level.

d. *Rate of gross financial autonomy*, reflects how much of the companies usages are financed from own resources. The minimum allowable value is 33%, although it is considered that own sources should contribute to the financing by at least 50%. Below the minimum allowable value, the company is in an unfavourable situation in terms of risk of insolvency.

e. *Rate of financial autonomy on due time*, reflects the extent to which own capitals participate to the creation of permanent resources. The minimum allowable value of the index is 50%, a limit below which the company is considered to be in an unfavourable situation in terms of risk of insolvency.

f. *Rate of gross indebtedness* reflects the percentage of debts, regardless of their duration and origin, in the total resources. This rate, by its sub-unit nature and as the relation's value decreases, indebtedness reduces, i.e. the financial autonomy increases. The size of the index may be influenced by the following partial rates of gross indebtedness: rate of bank debts, rate of commercial debts, rate of tax debts, other debt rates.

2.2. Liquidity and solvency indicators

It may happen that highly profitable companies lack liquidities because of high investments, reckless accumulation of stocks, granting too high credit to its customers etc. Although there is no ideal information, an imperfect indicator is worth however more than the lack of it. Therefore, the financial management has that imperfect instrument – the balance sheet – to determine the company's liquidity and solvency.

Liquidity characterises the company's ability to pay its due obligations and to face unpredicted needs of cash, being considered as the factor governing survival. Indicators referring to this objective

relate to the working capital (the working capital) or to certain parts of it, very important in case of a comparison between companies in the same field of activity or between chronological rates achieved by the same company.

Moreover, managers are also interested in the company's solvency, respectively in its ability to pay all obligations and by which the risk of total long-term payment inability can be evaluated.

a. *Rate of current liquidity*, reflects the extent to which current debts can be covered from current assets (the relation between current assets and current liabilities). It is considered that the minimum acceptable value is 1,00, under this limit, the company may face the danger of payment inability. The maximum acceptable value is 2,00, above this limit it is considered that current assets are not used properly. In terms of liquidity evolution, it is not enough for the report to be higher than one, but its tendency should be increasing. A decreasing evolution shows a declining activity; therefore creditors have to be cautious in granting new loans.

b. *Rate of rapid liquidity* shows the company's ability to pay current obligations from liabilities and availabilities in cash. It is determined as the relation between current assets, except stocks, and current liabilities. The minimum acceptable value is 0,65, under this limit the company is in danger of payment inability. The maximum acceptable value is 1,00, above this limit it is considered that the company is not using its current assets properly.

c. *Rate of quick ratio*, is also encountered under the name of acid test or quick index and it characterises the company's instantaneous ability to repay current obligations from already existing liquidities. It is established as the ratio between availability and current obligations. Although, in theory, a high value of the rate shows good liquidity, it can also have other meanings, such as the inefficient use of current assets. Moreover, a high rate cannot guarantee solvency, if the other liquid assets have a low degree of liquidity.

d. *Rate of overall solvency*, established as a ratio between total assets and total liabilities, shows the extent to which debts can be covered from the company's assets. The minimum acceptable level is 1,66, which means that the company has the ability to pay its immediate and distant cash obligations to third parties. The company may be solvent if, at a given time, it is incapable of payment. Solvency is generated by an efficient activity, and the lack of payment ability and liquidity may be temporary if the company bases on an overall solvency. As we were saying, the financial management will analyse the possible liquidity values, hierarchy between creditors and possible personal or real guarantees, legal status of the liquidated company.

e. *Overall solvency ratio*, reflects the percentage of net accounting asset (unencumbered) in total assets. The minimum acceptable level is 35%, but the normal one would be of at least 50%.

As a conclusion, we consider that establishing the liquidity and solvency is one of the most important axes to capitalize the information presented in the annual compulsory reports, the financial management being in condition to build a series of rates which, analysed, will reflect how financially healthy the company is.

2.3. Debt indicators

Rates of indebtedness, sized according to the liquidity-enforceability analysis, outline the importance of indebtedness on the company's financial management. Comparing external financing through borrowed capitals with the equity, through these rates, the financial management outlines the components of borrowed funds but also the distribution of permanent capitals between owned and long-term borrowed funds.

a. *Indebtedness* shows the part of the company's assets financed by creditors in comparison to the part financed from own resources. It is determined as percentage ratio between borrowed capital and own capital. The higher this indicator is (maximum acceptable value is considered to be 30%), the more severe the company's obligations are and its situation more risky.

b. *Rate of financial independence* reflects the extent to which the company uses its own funds and shows the level of independence from permanent creditors. It is calculated as the ratio between own capitals and permanent capitals. Traditionally, bankers claim that this indicator be higher than 50%.

c. *Rate of reimbursement ability* theoretically shows the company's ability to repay all long-term loans. It may be established as the ratio between long-term contracted loans and auto financing ability, expressed in number of years. The lower this value is, the better will the reimbursement ability be. The maximum period imposed by banking provisions for the theoretical reimbursement of long-term loans through the auto financing ability is 3 years and for the total of loans the period is 4 years.

d. *Interest coverage level* is determined as the ratio between the profit before taxation and deduction of expenses regarding interests and expenses with interests. The value of this indicator should be the highest possible, higher than one required.

e. *Cost of indebtedness* may also be found as the average interest rate being expressed through the ratio between expenses with interests and total loans. If the value of this indicator is lower than the economic profitability, indebtedness favours financing through borrowed funds.

f. *The percentage of current credits in the total borrowed assets* expresses choosing the financial management in terms of financing possibilities. A higher percentage of current loans in the total borrowed assets may represent a vulnerable situation which depends on the type of these resources and their high quote.

2.4. Indicators regarding the administration of the general activity

To determine how the activity runs, top managers are able to exploit the information provided by the financial management, are a multitude of administration rates that will be used to assess the use of company's resources, respectively the speed they go through the economic cycle and they turn in liquidity, in the case of assets, or the speed of resources renewal, for the liabilities.

All these rates involve comparisons between the turnover (CA) and different elements of the assets, liabilities and own capitals, based on the idea that there should be a relational equilibrium between them. The specialised literature outlines two ways of expression of these rates:

- As number of rotations (No. rot.) through the turnover, expressing how many times an element of asset or liability can turn into liquidity. For the activity to be considered competitive, these indicators have to be high, namely the balance item participates in as many production cycles. It is determined according to the relation:

$$\text{No. rot.} = \text{CA} / \text{balance item}$$

- Duration in days of rotation (Dz) shows the average duration in which the analysed element goes through the entire economic cycle and returns to the company as cash. If rotation rates are expressed in this manner, for the company to be competitive, indicators should have the lowest value which means a more rapid recovery of the analysed element in the form of cash. The general calculation model is given by the relation:

$$\text{Dz} = \text{balance item} / \text{CA} \times 365$$

A. Capital's rates of administration

a. *Rotation rate of total assets* expresses the efficiency of using the company's means. A value judgement is possible only if the evolution is monitored in its dynamics, expressed in number of rotations per year. A rate lower than the industry average (2,5 times) suggests that the company does not make enough sales to the used assets, this being the consequence of an inefficient administration of stocks. Turnover must increase and assets that do not bring profit should be eliminated.

b. *Rotation rate of fixed assets* depends on the company's investment policy. The minimum value providing an acceptable efficiency of fixed assets' administration is of 4 rotations, which corresponds to a 90 days recovery term as initial cash.

c. *Rotation rate of permanent capitals* shows how permanent resources are capitalised in an administration period. The minimum value ensuring an acceptable efficiency of the permanent capital's management is 2 rotations, which corresponds to a 180 days average recovery term as initial cash.

d. *Rotation rate of equity* shows how many times the company advances and recovers during a financial year, the resources it administrates. The value considered minimum for an efficient management is 2 rotations, respectively 180 days.

e. *Rotation rate of borrowed capitals* shows the number of recoveries of borrowed and attracted sources from total incomes during a financial year. The minimum value is considered to be of 4 rotations, respectively 90 days.

B. The rates of liquid assets management

a. *Rotation rates of customer receivables*. It is recommended that in the financial management this rate is expressed in days, thus reflecting the average period of time in which the collection of the company's liabilities from customers takes place.

b. *Rotation rate of stocks* represents one of the most relevant indicators related to the company's activity. The minimum value providing an acceptable efficiency of stock management is 8 rotations, respectively 45 days. Acceleration ways of liquid assets rotation speed are varied, specific to each stage of the activity: supply (ensuring a rhythmic supply, a permanent safety stock, reducing losses by

improving storage conditions etc.), production (redesign of products and assimilating new products with lowers consumption, improving technological processes and procedures, proper organisation of production and work, rational organisation of internal transport and work supply, increasing the quality level of products etc.) and sale (increasing sale rhythm, increasing collection rhythm of delivered products, etc.). To get a more detailed image on their management, it is analysed on the main categories.

C. Current liabilities management rates

a. *Credits' rotation rates* – suppliers measure the average period of time when the company honours its debts to suppliers, namely the average duration it benefits from the supplying credit as financing source of liquid assets. It should be mentioned that, both in the amount of debts and in that of supplies, the gross amount will be taken into consideration, meaning that it also includes owed taxes (value added tax). The best value of the indicator is maximum 30 days. The following two basic correlations should be pursued in the financial management regarding this rate:

- rotation duration of supplier credits > cumulative duration of stocks of raw materials, products under manufacturing, finished products for companies with production activity or the rotation duration of suppliers credits > rotation duration of stocks of goods for companies with commercial activity, through which the company would be able to finance the whole production cycle, merchandising from resources purchased from suppliers;

- rotation duration of supplier credits > rotation duration of liabilities – customers, through which the company would be able to get a financial surplus from the difference between resources purchased from suppliers and those available to customers.

b. *Rotation rates of operating debts*. The financial management is considering these debts, others than the short-term bank loan and the supplier credit, which it objectively generates carrying out the operating activity, such as obligations towards employees and other creditors, towards the local, state budget and social insurance, as well as the obligations deriving from non-allocation of profit destinations.

Rotation duration may also be expressed according to the relation:

$$Dz = \frac{\text{balance item}}{CA \times P\%} \times 365$$

where P% is the percentage of the component corresponding to the asset or liability element in the total turnover (CA). The rate system expressed in number of days is known as **kinetic rates**, having a superior informative power both through the high level of compatibility, and through their way of expression. All these rates form a dynamic system of indicators that fairly reflect the company's financial equilibrium (table 1).

Table 1: Kinetic rates system

Indicators	Calculation relation	Observations
1. Rotation duration of stocks of raw materials and materials	$D_{Rmp} = \frac{Mp \times 365}{CA \times M\%}$	Mp = raw materials and materials (balance sheet); M% = consumption from third parties / CA (profit and loss account)
2. Rotation duration of production under manufacturing	$D_{Rc} = \frac{Pc \times 365}{CA \times M\% \times \frac{F\%}{2}}$	Pc = production under manufacturing (balance sheet); F% = percentage of manufacturing expenses / CA
3. Rotation duration of stocks of finished products	$D_{Rpf} = \frac{Pf \times 365}{CA \times C\%}$	Pf = finished products; C% = percentage of production cost / CA
4. Collection duration of customers	$D_{Rc} = \frac{C \times 365}{CA \times I\%}$	C = customers to be received; I% = percentage of collections (including VAT) / CA
5. Payment duration of suppliers	$D_{Rf} = \frac{F \times 365}{CA \times M\%}$	F = suppliers to be paid
6. VAT payment duration	$D_{TVA} = \frac{TVA \times 365}{CA \times TVA\%}$	TVA = debts to the budgets regarding the VAT; TVA% = VAT / CA percentage

Source: Stancu, Ion, 1997, p. 535

Although rotation rates by means of turnover are extremely easy to be calculated, these indicators are somehow affected by shallowness because they state a perfect relation between turnover and the items

of assets and liabilities. For example, for the rotation duration of fixed assets the 200 days value is obtained. According to the interpretation of the indicator, it would result that within 200 days complete renewal of fixed assets may be achieved, while turnover is assigned entirely for this purpose. However, we have to take into consideration the fact that a company is currently using the turnover to cover an important number of costs, as well as taxes and fees, employees, dividends, etc. Therefore, only a certain component of the turnover, namely redemption, is the recovery source of fixed assets. From this perspective, for each balance item, more relevant specific rates can be calculated than through the turnover.

In the specialised literature, the rotation durations calculated according to the turnover are known as **overall rotation durations**, and those calculated according to one of its components are **partial rotation durations**.

To determine the composing elements of the turnover corresponding to each balance item is useful to monitor the structure of purchase, production, production cycles costs to which the item participates, and for those of liabilities the recovery method of invested funds is pursued. A schematic presentation is shown in table 2.

Table 2: Relation between balance elements and turnover

Balance items	Component of turnover
Fixed assets	Expenses with redemption
Stocks of raw materials	Expenses with raw materials
Stocks of production under operation	Cost of production under operation
Stock of finished products	Cost of production
Suppliers	Expenses with suppliers for purchase on credit
Deductions with employees	Staff costs

Source: Dragotă, Victor; Ciobanu, Anamaria; Obreja, Laura; Dragotă, Mihaela, 2003, pp. 295-296

Whether turnover is used or not, the structure of rates proves to be extremely useful to the decision making process, a series of economic and financial analyses being achieved through them, absolutely necessary to make the activity efficient. There are, however, many companies which either give no importance to the administration rates of the overall activity, or they calculate them but forget to further analyse them.

3. Conclusions

The financial accounting provides a correlated and verified information system, living no room to subjectivity and promoting exactness and accuracy of economic and financial phenomena. The accounting information can be achieved by:

- *External users*, for whose needs different standard forms of the financial statements are often used;
- *Internal users*, the information offer being made through reports adapted and customized according to the current management needs of the business, these reports are confidential.

According to the general conceptual framework of the financial reporting, “the objective of the financial reporting with general purpose is to provide financial information on the entity that makes the reporting that is useful to existing and potential investors, borrowers and other creditors in the decisions they take regarding the offer of resources to the entity ..., to help them evaluate the perspectives regarding net cash inputs for an entity.”

Generally, the activities carried out within the entity are too many to be reported in individually to the people or institutions from outside. Moreover, each of the activity has its own characteristics and development strategies, as each user has its own needs. It is currently considered impossible to determine all activities to every user separately, by drawing up official financial statements trying to synthesise all activities that would meet external requirements.

Through the documentary potential, through the way it takes part in the “information-analysis-decision” circuit, the balance sheet represents a fundamental reference point as penetrating offer and catalyst in the company’s general management. The role of the balance sheet in the activity’s management process has an increasing tendency, taking into account the social character of production and relevance of the information it contains. The specific features that enhance its information valences are also determined by the fact that the balance sheet does not only boil it down to the brief presentation

of series of information related to the previous financial year but, based on it, the analysis of economic and financial processes and phenomena is carried out, in dialectical relationship, the cause-effect relations among them is established, activity adjustment measures are determined, prognoses are elaborated, decisions are taken.

4. References

- Balteș, Nicolae; Ciuhureanu, Alina-Teodora (2010) *Bazele contabilității. Fundamente teoretice și practice*, Editura Universității “Lucian Blaga” din Sibiu, Sibiu, p. 155-162
- Balteș, Nicolae; Ciuhureanu, Alina-Teodora (2003) Obiectivele situațiilor financiare în contextul globalizării economice, *volumul sesiunii “Provocările științei în secolul XXI”*, secțiunea Management, Ed. Academiei Forțelor Terestre “Nicolae Bălcescu”, Sibiu, pp. 201-206
- Bătrâncea, Ioan (coord.) (2001) *Analiză financiară pe bază de bilanț*, Presa Universitară Clujană, Cluj-Napoca, pp. 56-57
- Ciuhureanu, Alina-Teodora (2009) *Management financiar*, Ed. Universității Lucian Blaga din Sibiu, pp. 192-199
- Ciuhureanu, Alina-Teodora; Balteș, Nicolae (2009) Aspects regarding the accounting information offer through the financial statements, *Studia Universitatis „Vasile Goldiș din Arad”, Seria Științe economice*, nr. 1-1/2009, pp. 437-444
- Dragotă, Victor; Ciobanu, Anamaria; Obreja, Laura; Dragotă, Mihaela (2003) *Management financiar*, Vol I: Analiză financiară și gestiune financiară operațională, Ed. Economică, București, p. 205, pp. 295-296
- Eros-Stark, Lorant; Pantea, Ioan Marius (2001) *Analiza situației financiare a firmei. Elemente teoretice. Studiu de caz.*, Ed. Economică, București, p. 141
- Evans, H. Matt (2004) *Evaluating Financial Performance*, curs, available at <http://www.exinfm.com/training/pdffiles/course01.pdf>, accesat ianuarie 2004, pp. 3-4
- Feleagă, Niculae; Malciu, Liliana; Bunea, Ștefan (2002) *Bazele contabilității: o abordare europeană și internațională*, Ed. Economică, București, p. 45
- Feleagă, Niculae (1997) *Dincolo de frontierele vagabondajului contabil*, Ed. Economică, București, pp. 108-110
- Georgescu Nicolae (1999) *Analiza bilanțului contabil*, Ed. Economică, București, p. 27, p. 215
- Ionescu, Cicia (2003) *Informarea financiară în contextul internaționalizării contabilității*, Ed. Economică, București, p.104
- Leuștean, Doina (2004) *Bilanțul, suport cognitiv al poziției financiare*, volumul “Congresul profesiei contabile din România. Armonizare sau Convergență în Standardele Internaționale de Contabilitate?”, București, 3-4 septembrie 2004”, Ed. CECCAR, București, pp. 403-404
- Mica, Ivona Gabriela (2009) *Importanța raportărilor financiare în managementul firmei*, Revista Contabilitatea, expertiza și auditul afacerilor, nr. 10/2009, p. 40
- Morris, Mitchel (2000) *Cum să devii manageri de succes*, traducere, Ed. ALL BECK, București, p. 237
- Stancu, Ion (1997) *Finanțe. Teoria piețelor financiare. finanțele întreprinderilor. Analiza și gestiunea financiară*, Ed. Economică, București, p. 535
- Tabără, Neculai; Chetrariu, Gabriela (2002) *Conturile anuale în sistemul informațional al întreprinderii*, Revista Gestiunea și contabilitatea firmei, nr. 2/2002, p. 30
- *** - *Standardele internaționale de Raportare Financiară emise la 1 ianuarie 2011*, partea A, (2011) Ed. CECCAR, București, p. A27, p. A385

INTERNAL AND EXTERNAL AUDITORS AS A TEAM-WORK

CONSTANTIN Nicolae Vasile

Ph. D. Student, Bucharest University of Economic Studies, Constanța, Romania, icolae.constantin@medu.edu.ro

SUSMANSCHI Georgiana

Ph. D. Student, Bucharest University of Economic Studies, Constanța, Romania, georgiana19iu@yahoo.com

Abstract: *The paper concerns about the relationship between internal and external audit. Auditing activity is known as an activity which brings plus value, an activity with a short history, raised from our need of a high level of performance regarding all the activities developed in a company, especially in now-a-days economy when the word quality gains a much higher value. So, the auditing activity takes her well-earned place on the market, were we meet two concepts of auditing, such as internal auditing and financial (external) auditing. A company is a multitude of activities and departments. In the rush of business, companies need also external partners for the proper performance of their activities. In this respect, the internal audit department should work with the external auditor. From this collaboration results a series of advantages for both categories of professionals that contribute to the improvement of specific methodologies for both activities.*

Key words: internal audit, external audit, management, auditing basic principles, information exchange

JEL classification: M 10, M 14, M 42

1. Introduction

The audit, in accordance with international rules of audit, but also in opinion of many authors, can be defined, in a simple form, as an examination of the situations, whose purpose is expressing a responsible and independent opinion, an opinion that means that the financial statements have been prepared according to the accounting identified references, named quality criteria.

According to ISO 8402, the audit can be defined as a methodic examination conducted to determine whether the activities and results relative to the subject are considered to satisfy the provisions of default and whether these provisions are put into opera in an apt and effective manner, in order to achieve the entity's objectives.

2. Differences between internal and external auditing

Auditing architecture is composed mainly by internal and external (financial) audit. International standards, guidelines, the recommendations issued by specialized organisms are coming to help us give auditing activity a definition, giving us a hand in understanding audit.

A deeper presentation of those two concepts of audit can be done, but we must mention an essential thing, the fact that those two functions do not compete, on the contrary we can affirm that they are complementary.

In the following, we will try to approach the differences (table 1) and similarities of internal and external audit.

The differences between the two concepts are presented in the next table.

Table 1: Differences between internal and external auditing

Compared elements	Internal auditing	External (financial) auditing
Statute	Being an integrated function, dependent by the company, results that the internal auditor is an employee of the firm.	As an independent activity, the external auditor is represented by an authorized independent auditor or by a company which offers this kind of services.
Beneficiary	Through the perspective of his characteristics, internal auditing give information to the company's responsible, as managers and auditing committee.	External auditing works to obtain information in benefit of a large range of users, like shareholders, bankers, authorities, clients, suppliers.
Objectives	Internal auditing has as objective appreciation of an efficient development of the activities developed by the entity and recommendation	External auditing takes a look at the entity from outside, though it has as objective the certification of the honesty and a correct and

	of some directions regarding detected problems.	fiddle representation of the results and the financial situation of the entity.
Application field	Internal audit it's applicable in all departments of the entity.	External audit is limited to observations and investigations regarding accountancy.
Fraud preventing	Internal audit approaches fraud referring to personal folders.	External audit is interested to any fraud that might affect the financial situation of the entity.
Independence	Internal auditor is an auditor employee of the entity, without juridical and statute independence.	External auditor, as we mentioned before, is an independent auditor, which pleads for a free profession.
Periodicity	Internal audit has a permanent character, being continuously present, solicited in permanence with the same intensity, any time of the year.	External audit has a temporary character, being solicited in some specific periods, in order to certify accounts.
Procedure	Internal audit has a specific and original method.	External auditors accomplish their work based on specific methods, like analyses, inventories.

Source: operated information undertaken from specialized material

3. Similarities between internal and external audit

As similarities between internal and external audit, we mention the following:

- Both are effectuated by specialists;
- Both functions help to a consolidated position of the entity on the market, assuring trust and respect from the entity's partners, meaning clients, suppliers, investors, state and other institutions;
- They both respect deontological principles;
- In both cases, the annual financial statements are open to an audit work in a obligatorily;
- The auditors are responsible with the elaboration of the audit report, which will have to be signed by the auditor on each page;
- Objectivity, internal and external auditors must maintain their objectivity, so that they can give a correct and fiddle representation of the entity's situation;
- The auditors' responsibility is limited to the situation's control, they are not responsible for the preparation of financial statements;
- In their sphere of control accountancy is included, both functions appealing to the information given by accountancy through her support, like registries, documents, cd, dvd, programs;
- They are functions that overtake information, in order to analyze them and so be able to give, at their turn, new information to the beneficiary;
- Co-treatment, defined by IFACI as a constituent of a common team between internal auditors and external consultants, in order to complete a determined mission;
- External services, defined by IFACI as a punctual assistance of external specialized companies. In this point, it can appeal to multi-disciplinary specialists like technicians, computer-experts, jurists;
- Interdiction of any auditor's intervention in the management activity;
- Utilization of identical ways, even though there is a different methodology.

Although, there are some major differences, the main one consisting in their statute, we can take a conclusion from their similarities: that internal and external audit are not competitive functions, on the contrary they are complementary.

So, the internal audit is a complement of the external one because where is internal audit function, the external audit must appreciate in a different way the qualities of honesty and fiddle representation of the accounts. This aspect is mentioned in Direction 550-02: "access to the programs and work files of internal auditor must be given to the external auditor, so that the last one can take as support internal auditor's work".

In the same time, external audit is a complement of the internal audit, an element of evaluating business.

These being said, we can affirm that internal and external audit must collaborate, as Direction 550 mentions:

- coordination of the work whose responsibility is the director of internal audit, and in this respect, avoid any duplication of assignments;

- the possibility left to the internal audit to perform work for external auditors, subject with the condition of respecting IIA rules;
- in consideration of what preceded it: the possibility of internal audit director to have an appreciation of the work of external auditors;
- reciprocal access to programs and files;
- mutual understanding techniques, methods and terminology. And this issue should not be missed in the formation of external auditors;
- the transmission of external audit reports to internal auditors and each other, of course under cover of confidentiality to those two functions;
- establishing joint plan interventions to minimize difficulties caused by audit
- collaboration may go even further and it is desirable to go to achieve internal and external audit in the same service at the same time, each with its questions and methods to its objectives, with periodic exchanges of information along mission.
- regular working meetings once or twice a year, each possessing its investigations, its findings and feedback which compares the two parties. It is often an opportunity to find faced convergences.

Next, we will try presenting several advantages, and disadvantages of internal audit, external audit.

4. Advantages and disadvantages of internal and external audit

Internal audits are part of a whole, represented by patrimonial entity, which has the power to assist the enterprise, assisting members to exercise effective management of their responsibilities by providing analysis, feedback, comments and recommendations on relevant activities examined, presents certain advantages, resulting in precisely the status of this work.

Among these advantages are included:

- knowledge of the environment, an internal auditor will understand better the internal control through a permanence contact with the entity;
- a permanent action, internal audit is not a temporary action, exercising his functions throughout the existence of the entity;
- in-depth analysis, internal audit having regard to all its components, not only the accounts;
- can give the best answers to issues of privacy through the first advantage: a detailed knowledge of the environment in which they operate;
- internal audit brings a plus value, materialized in a general improvement of the entity's activity;
- internal audit contributes through its methods to loss stop.

Internal audit presents disadvantages too, namely:

- environment influence, an inconvenient which has its origins in the same advantage as environmental awareness, namely to be kept within the entity, having the risk to influence audit work;
- term routine.

External audit, aimed in expressing a motivated opinion on the regularity, honesty of the financial statement, being capable in giving a reliable picture of annual accounts which are submitted to its present, have, just as internal audit, both advantages and disadvantages.

The advantages of external audit include:

- expert competence;
- procedures experience;
- total independence;
- a new and neutral vision;

The inconvenience of external audit brings into question the following aspects:

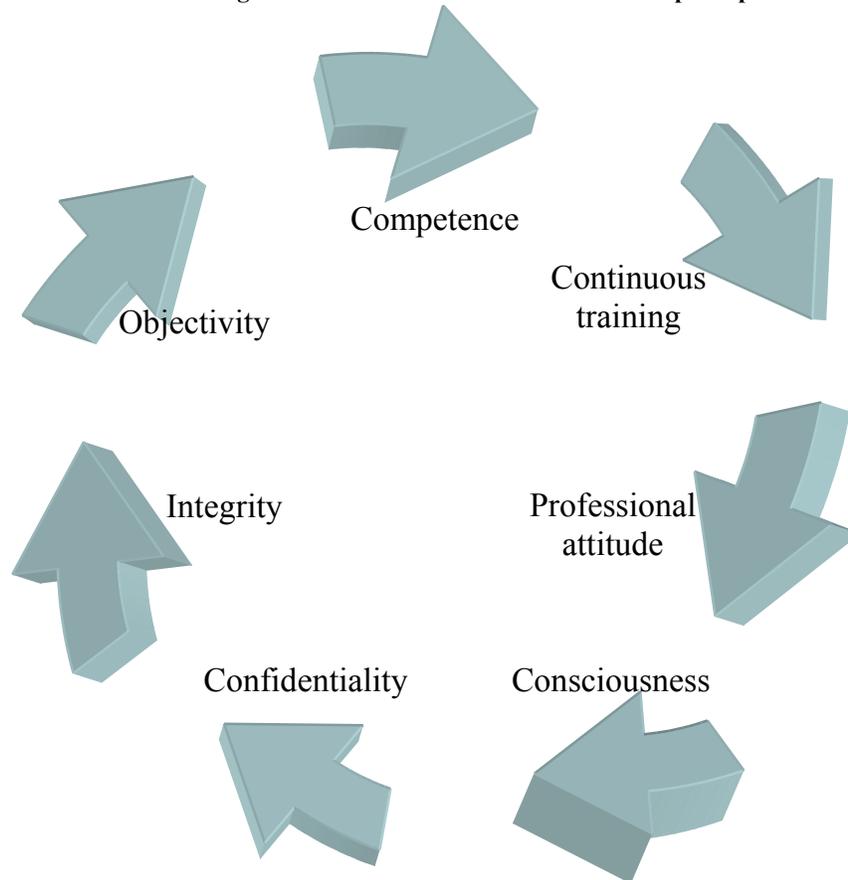
- A punctual intercessory (mission);
- General recommendations are often superficial.

5. A personal approach of internal and external auditing

Some basic principles governance the internal and internal auditors work, those principles can be found in both internal and external audit standards, like Internal Audit Directions and the Ethic code

of professional accountants. These principles will be presented as it follows, in the following figure (figure 1).

Figure 1: Internal and external audit basic principles



Source: operated information undertaken from specialized material

Regarding those basic principles we mentioned above, we should say a few things about each one of them.

To this purpose we are giving the following opinions:

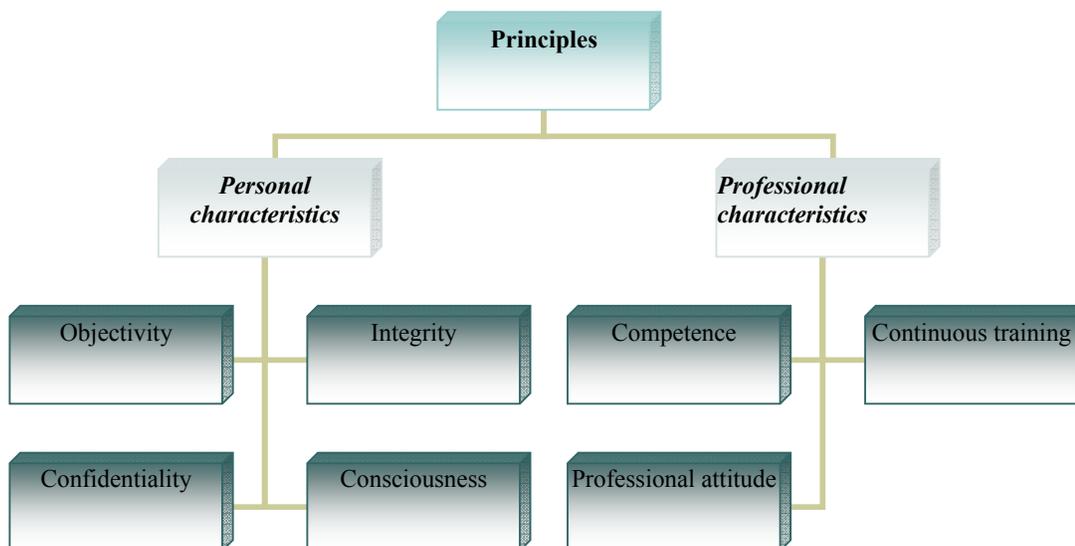
- 1) An auditor must be proficient, must have an adequate qualification required to an efficient audit work;
- 2) The auditor should have in plan, constantly, a permanent training, he will have to be up-to-date with all directions, standards, a professional stagnation not being allowed to an expert in any field of activity;
- 3) The auditor must maintain and respect confidentiality regarding information they have access to, as a result of the audit work;
- 4) The auditor should not let any circumstances/emergencies to influence him, he should have an objective point of view, not a subjective one, regarding audit work, in the purpose of exercising a competent and professional work worthy of trust in front of the beneficiary;
- 5) An auditor must be impartial, right and honest in all his professional and business relations;
- 6) An auditor has the responsibility of an action according to mission requirements, with meticulousness and paying attention;
- 7) An auditor has the obligation to respect laws, directions, avoiding any kind of action that could be a reason of profession disparagement.

All these principles do not eliminate each other, they become complementary; from a principle derivate another and so long.

The auditor cannot decline any of these principles, the work of audit and his acknowledge being done through those principles.

It can be observed that the 7th principles mentioned above can be structured by their appurtenance in a category (figure 2). In this purpose we present the following figure.

Figure 2: Principles appurtenance



Source: operated information undertaken from specialized material

From figure no.3 it can be observed that objectivity, integrity, confidentiality and consciousness fit into the personal characteristics category. These principles should be present in every field of activity, with a great importance in an expertise activity.

Competence, continuous improvement and professional attitude are principles that are included in the professional category features. As well as other principles included in the category of personal characteristics, these principles should make the formation of any worker, regardless of the area where they operate, especially in an area of expertise.

Both external and internal auditors must take in consideration some common basic directions, as it follows:

- auditors will respect principles and rules, regarding internal and external audit, by case;
- auditors must respect information confidentiality and will have to consider an open-eyed position with the possibility of information leaking;
- auditors will not use information obtained in their work of audit, as a result of professional or business relations, in their personal interest or in the interest of a third part;
- auditors must have knowledge, skills and other capabilities in order to complete their work of audit;
- auditors must have sufficient and relevant knowledge in order to identify fraud, but not meaning that they will have the competence of a person whose main responsibility is identifying and fraud investigation;
- auditors must develop their skills and proficiency, appealing to a continuous training, so that they could keep up with society's dynamism. A proficient service requires a permanent consciousness and an understanding of relevant evolutions on professional plan. A continuous training develops and maintains abilities that allows auditor to do a work done competently;
- auditors must have a neutral and non-prejudgment attitude;
- auditors must avoid conflict of interests;
- auditors must avoid auditing some special operations that they were responsible of. An auditor's objectivity is considered affected when they accomplish an assuring mission for an activity they were responsible of.

All audit missions must be accomplished with maximum of consciousness and competence, including the responsibility to action in conformity with the mission's requirements, with maximum of attentions and meticulousity, at the right time.

In an acceptance of free markets and a society in continuous development, audit gains values increasingly popular and higher, a certification that the activity of a company is in accordance with international standards, thus always an added value, representing an ace of the company. This will bring notoriety, will confer confidence and stability, notifying that the entity is an important player on the market and can face market demands.

6. References

- Alexandru, G.; Constantin, N.V. (2011) Internal Audit- Pillar of Corporate Governance, *Ovidius University Annals: Economic Sciences Series*, Vol. XI, 1, p. 69-72.
- Arens, Alvin A.; Elder, Randal J. (2010) *Auditing and assurance services: an integrated approach*. Prentice Hall.
- Bostan, I.; Grosu, V. (2010) The Role of Internal Audit in Optimization of Corporate Governance at the Groups of Companies, *Theoretical and applied Economics*, 2, p. 63-84.
- Bunget, O.C.; Florea-Ianc, Z.; Ghiță, M.; Nicolau, C.; Pereș, C.E.; Pereș, I. (2009) *Corporate Governance and Internal Audit*. Mirton Publishing House.
- Constantin, N.V.; Alexandru, G. (2011) Internal Audit and Risk Management, *Ovidius University Annals: Economic Sciences Series*, Vol. XI, 1, p. 434-437.
- Cretu D. (2011) Raportul între auditul intern și auditul extern în contextul costului nevoii de asigurare, *Revista Audit financiar*, 3, p.14-18.
- Gallegos F. (2011) *Safeguarding auditor objectivity: corporate governance practices must not compromise auditor independence*. Available at http://findarticles.com/p/articles/mi_m4153/is_5_61/ai_n6332698.
- IIA (2003) Internal Audit Independence and Corporate Governance A Research Survey of and for IIA Chicago Chapter Members March 24.
- Jacques R. (2002) *Theorie et pratique de l'internal audit*. Editions d'Organisation, Paris, France,
- Pop, A.; Bota-Avram, C. (2009) Global economic crisis: could internal audit prevent this crisis?, *Financial Audit*, 7, p. 14 – 21.
- Terci, N. (2009) Internal audit and it's controversies. Opinions, *Financial Audit*, 7, p. 38 – 43.
- Toader, S. (2009) Management during crisis period: top managers' priorities, *Financial Audit*, 7, p. 3 – 10.

THE BITCOIN ECONOMY, AN ANTI - CRISIS REMEDY?

COZMEI Cătălina

Ph. D. Student, Faculty of Accounting and Management Information Systems Faculty, Academy of Economic Studies, Bucharest, Romania, cozmei.catalina@yahoo.com

CALOIAN Florentin

Ph. D. Assistant professor, Faculty of Accounting and Management Information Systems Faculty, Academy of Economic Studies, Bucharest, Romania, florentin_caloian@yahoo.com

Abstract: *The explosion and crisis of the financial markets, the increasing variety of economic transactions and higher levels of risk and uncertainty are the cardinal vectors in outlining the new economic landscape, where the value of the physical currencies is weaker than ever. In this ecosystem, the deployment of a digital currency has become a reality. This article looks more in-depth at Bitcoin economy in order to dissipate the illusions of this innovative monetary technology, ruled by a lot of speculation and few hard data. Moreover, it unveils the potential tax issues raised by this dematerialised form of money.*

Key words: Bitcoin, intangible, currency, money

JEL classification: H 12

1. Introduction

From the very outset, money's ambivalence reflects the ambiguity of its social function: an instrument designed to develop and maintain some forms of trust, to control and lead societies towards greater cohesion, peace and harmony. Money is also a lever of power and a source of violence. It consists in a "promise to pay", in a "social relation", a social sphere in which impersonal exchange takes place. It is the fundamental institution of the market economy.

Reflecting on the relationship between money and economic systems we can discriminate among various economic systems strongly shaped by economic and political requirements. Thus, in the feudal economy fiduciary money was the dominant monetary system in contradistinction to scriptural money in the capitalist economy. Monetisation of the economy was a prominent vector of transition because money is seen as a yardstick, a measure for growth and wealth accumulation, social values and preferences, a „cash nexus" (Fergusson, 2001).

In today's fast growing economy, in which the euro crisis is on everyone's lips, some countries like China and Japan have abandoned the dollar currency in order to reinforce their own currencies. The "intangible economy" also known as Knowledge Economy, Digital Economy, Information Society, Third Wave fuels the triumph of the market as the primary intermediation mechanism and proliferate the implementation of electronic money.

Consistent with those mentioned, some online entertainment issuers (social media companies) offer digital currency (so-called virtual currency) for online players to use in virtual worlds (i.e. by killing monsters and completing designated missions in the online game). Players can convert the virtual currency to U.S. dollars or other currencies through online auction sites. Thus, a new phenomenon, that of gold farmers, workers employed to play online games in order to earn virtual currency, sustains the livelihood of small towns in China (with no alternative source of income).

And so, the popularity of virtual currency, makes major inroads into traditional payment systems and stems primarily from the application of new technologies and from the economical need to have an efficient online payment system.

Before we delve into a detailed analysis of Bitcoin currency uncharted territory, I will pose some questions with an eye to attempt some answers.

- Can we say that we really understand the current economic evolution?
- What are bitcoins and how are bitcoins used? Can they exist independently of electricity?
- Bitcoin currency is tax avoidable? How currency laws come into play when it is about Bitcoin?
- What design will pose future developments of money? What new opportunities will arise, and with what prospects for success?
- Does technology reduce barriers to entry to a point where any network can become a market, any computer can become a clearing system and anybody can issue electronic money?

These are the points of departure which will enhance our understanding of Bitcoins' monetary technology.

The article has two primary aims. First, to explore and highlight the synergy between the advent of new virtual forms of money, as Bitcoin ones, and technological advances combined with economic and social change. Second, to consider and clarify the Bitcoin currency from the viewpoint of its implications for taxation.

Exploring the reach of the Tax Code into virtual world transactions not only responds to the potentially practical needs of millions of taxpayers, it also permits a reevaluation of core principles of income tax as they interplay with life activities in the context of 21st century culture.

One section of this article outlines a few ideas about the opportunities and risks of the move to new forms of money, and also examines the shortcomings that the most dynamic and trendsetting area, information technology, is facing.

The last section offers an overview of the Bitcoin economy and concludes with a look at the future trajectory of electronic money and its critical challenges.

2. Defining trend: shift to the intangible and the novelty of “dematerialised” money

This new economic system is no longer shaped by physical flows of material goods and products but by the creation and manipulation of intangible content, a relationship between man and streams of data, ideas and symbols. From the demand approach, we consume more and more content-based outputs of information and entertainment.

The shift from tangible to intangible that affects all aspects of economic life, is considered to be a technology-driven phenomenon, but owes at least as much to basic trends in consumer behaviour and in the business environment (brand-driven competition). Shortly, the new technologies are tightly connecting the state, market and civil society.

Thereby, with the new economic landscape now outlined, we have to focus to money. Not surprisingly, in this intangible economy, where the final frontier—the space—was eliminated, and after its commodity and paper incarnations, money is now becoming “virtual” money. At the wholesale level it is rendered that the non-cash monetary transactions now exceeds the value of cash money by a factor of ten. Money and payments are almost entirely delivered via electronic networks or peer to peer systems; 93% of all online transactions in the United States are credit card-based.

Beyond the alteration of the representation and mechanics of money, there are deeper structural changes. Many analysts exert pressure that the bank control should be substituted by other actors control with the scope to provide their own tools both for issuance, clearing and settlement, because it is believed that private currencies will take hold and constitute a preferred form of electronic money.

In 1976, F.A. Hayek argued forcefully against the government monopoly on money and in favour of competing private issuers, because control is seen as a cause for inflation and the “boom and bust” cycle.

Recently, two private currency models have emerged. One is the community currency model, where the value store of money is constituted by a range of local services. By the instrumentality of community, local producers are supported, because these currencies have a limited traffic area, but homogeneous economically and politically.

The other private currency model is the corporate currency model. A corporation might issue their own “scrip” as media of exchange on Internet transactions (Greenspan, 1997; Weatherford 1997; Kobrin, 1997). The candidates for corporate currencies are GSM operators, through the loyalty programmes or points offered, which are redeemed either as additional minutes or against goods and services provided by affiliated merchants.

This new „virtual” payment ecosystem which is about to flourish, corresponds more fully to the needs of tomorrow's markets.

Entertainment market (i.e. music) is one of the markets where economic and monetary changes need to take place and also requires a leap in the reach of new means of payment (i.e. to make royalties payments whenever someone plays a song, directly over the network through a type of peer-to-peer system).

In the case of electronic money, technology is pervasive, more visible and hence more widely used. At the same time, technology becomes embedded in money. So, money is a technology which makes more difficult the control by those who traditionally issue the money or regulate the monetary and financial systems.

3. What Are Bitcoins?

Bitcoins have been described as “the digital currency of the future” – a new reality, that threatens to challenge all preconceived notions of currency and currency exchange.

According to founder Satoshi Nakamoto, Bitcoins are “a purely peer-to-peer version of electronic cash (that) would allow online payments to be sent directly from one party to another without going through a financial institution.”

Bitcoin is a digital currency that was created in 2009. Bitcoins are the unit of currency of the Bitcoin system, and have the shorthand “BTC”. A bitcoin is just a number associated with a Bitcoin Address.

Bitcoin experienced considerable rise during 2011 - when it floated over the \$30 mark - but then suddenly collapsed. As of April 2012 bitcoin was worth about 5 euros.

Bitcoins thrive on anonymity. These revolutionary transactions made in Bitcoins are virtually untraceable, are completely decentralized, with no bank, central authority or intermediary systems to control and prevent the flow of Bitcoins or manipulate their value.

Bitcoin is closely linked to a single owner, and every purchase or transfer results in an automatic change of ownership: in short, transactions are irreversible.

Embedded within Bitcoin is a complex public algorithm, which give the value of Bitcoins the ability to fluctuate over time and also ensures that the number of new bitcoins introduced to the digital circulation system is gradually predictable (the amount of produced bitcoins is halved each 4 years) in order that only 21 million Bitcoins can ever be made (today there are more than 6.3 million bitcoins in existence).

In other words, the supply of Bitcoins is limited by their underlying algorithm: the more Bitcoins exist, the slower new ones will be created. Consequently, Bitcoin’s design is supposed to make its value self-regulating.

When coin generation ends, what will sustain the ability to use bitcoins will be the transaction fees which are required in order to confirm a transaction in a timely manner.

Its safety is based on the cryptography and an open transaction register to create verifiable transaction records and keep track of them without the need to trust anyone.

The encryption scheme consists of an Elliptic Curve Digital Signature Algorithm (ECDSA), a key pair (the recipient public key and the sender private key) for each transaction. After a transaction takes place, the recipient publishes the transaction to the global Bitcoin network.

Like real currency, Bitcoins have an actual monetary value and can be traded through sites such as Mt. Gox online exchange. However, as Jerry Brito of Techland at Time Magazine explained, unlike national currencies, artificial currency inflation is impossible with Bitcoins, because Bitcoin has no central authority, no one can decide to increase the money supply by injecting more money into an economy (such as during the recent economic crisis).

In fact, with the passage of time, Bitcoin economy will experience as an eventual result, a slow deflation. To reflect a deflationary economic model in accordance with the law of supply and demand, when a limited number of bitcoins are available, those that will be in circulation will be in higher demand, and therefore their value will continually rise, hence the number of bitcoins required to purchase an item will decrease.

Economists generally agree that a low level of inflation is a good thing for a currency, but no one exactly knows what happens to a currency that grows continually more valuable. Once again we stray into a mysterious territory, where is a lot of speculation and no one has any hard data to back up their claims.

However, Bitcoin, offers a simple and smart solution: infinite divisibility.

Moreover, infinite divisibility should allow Bitcoins to function in cases of extreme wallet loss, because when a user loses his wallet, his bitcoins are inaccessible to anyone; they are gone completely out of circulation. As a result, your bitcoin wallet is like a physical wallet containing physical coins, if someone steals it, those bitcoins are not refundable, replaceable, or insured in any way.

The possible ways to acquire Bitcoins are:

- accept Bitcoins as payment for goods or services.
- convert or trade traditional currency for bitcoins.
- create a new block. Each time when a network node finds the solution to a certain mathematical problem it is generated a transaction block which is currently rewarded with 50 Bitcoins.

- participate in a mining pool (the process of spending computation power and resources to find valid blocks and thus create new Bitcoins).

The usage of Bitcoins has both its adepts and opponents.

Michael Suede describes Bitcoin as “the most important creation in the history of man” arguing that Bitcoins were superior to gold as a medium of exchange as:

“It is impossible to artificially inflate the supply of Bitcoins in existence. They are produced at a known steady rate, the supply of which will eventually top out.

Bitcoins can not be confiscated since the files they reside on can be replicated and hidden in USB keys or anonymous servers, thus far easier to secure than gold bullion.

The peer-to-peer nature of Bitcoin makes it as impossible to stop as BitTorrents. Governments would have to shut down the web to stop it.

It is impossible to create fake Bitcoins.”

The assessments brought by the advocate economists via Bitcoins also point to the level of economic freedom afforded to Bitcoin users, due to the fact that the state role over the usage of money and currency is reduced. In opposition, critics are calling for the state to ensure proper regulations and reduce the possibility of misuse.

Bitcoin is not a ponzi scheme or a zero sum game but therefore has possible win-win outcomes. Early adopters that took a risk and invested resources in an unproven technology profit from the rise in value. Late adopters, benefit from the usefulness of a stable, fast, inexpensive, and widely accepted peer to peer currency. Thus, the network displays a strong externality: the greater the number of users, the greater the benefits to every user.

3. Bitcoins users live in a tax exempt financial environment?

As our culture monetizes more and more activities, the shadow specter of taxation grows. Bitcoins are so new that no regulatory body has not released any concrete guidance as to how bitcoins should be treated. In accordance with this, I made some assumptions as to their treatment under current tax law.

From the perspective of tax compliance, this new form of currency is exactly as chargeable as cash. Every one should pay taxes for every invoice, no matter if he receives as payment for goods or services, cash, credit card or bitcoins. So, if you use Bitcoins to conduct transactions, they are not tax free. It's the same as barter transactions, even if , tax laws may be harder to enforce if you don't have intermediaries like banks and credit card companies. Just because transacting in bitcoins can make tax evasion easier does not mean there is no tax liability.

But Bitcoins are traded anonymously even if you work for them or accept them in exchange for services.

According to US tax laws an income is taxable when can be measured on a dollar value or when is recognized as a valuable property. Thus, trading Bitcoins for Bitcoins is exempt from taxation. Selling Bitcoins in exchange of money is essentially earning an income and you are required to report that as income, because in the case of virtual currency there is no legal withholding entity, so individuals who obtain the income shall voluntarily declare the income to a tax authority.

Solo mining itself would not be considered taxable income. You are not receiving the bitcoins from someone else (another person/business/entity in return for something), you are creating them yourself. So, I would argue that mining bitcoins doesn't generate income or any taxable event, until you sell the bitcoins, or use them to buy something (in which case the transaction would be treated as a barter).

When you are in a pool, it is clearly different, because it is considered that you are offering your services to the pool and they are paying you in bitcoins, in which case, any payment you receive from the pool would be taxable income.

When selling mined Bitcoins, you would also be taxed on the increase between the value you recorded them at when you first received or mined them, and the value at time of selling. So, this could imply a capital gain or a capital loss as well, which earns you a tax break. But people should record and keep track of a) the date and price that they paid (or the fair market value of any mined coins at the date they were earned), b) any expenses that they incurred in the mining or purchasing process, c) the date and price received for any coins sold.

Another option is to report the value of bitcoins only at the time they are sold as taxable income.

Non-casual miners may want to report it at time of mining so that they can claim deductions against income such as the costs of energy and equipments (video cards, screens, hardware equipments).

I think it is reasonable that people to use whatever alternative works best for their personal situation.

4. Are bitcoins a financial instrument or a currency?

Based on published articles and papers, for tax purposes, Bitcoin, in US and EU, seems to be a commodity rather than security or currency, since there is no issuer. Another possibility is to consider mined Bitcoins as 'intangible personal property'.

Commodities are not considered as income, and thus not taxable, regardless of how they have been obtained. Being a commodity, BTC itself is not directly taxable. What is taxable is when BTC is actually exchanged for fiat currency (cash) or something else. In this case, you can report an operating loss (if your income from selling bitcoins is less than your operating expenses), but you cannot claim a capital loss on the bitcoins if they lose value between the time they are mined and the time they are sold. While this classification might change in the future, for the time being, the definition from a taxation law standpoint is "virtual commodity".

Gold and other precious metals are a special case in that they are legally categorized as both a commodity and a currency, so receiving payment in those forms would be considered income.

European Union has a directive for e-money. Whether this applies to Bitcoin is unclear, because it makes the assumption that e-money is a debt instrument. Bonds, notes, and other evidences of indebtedness are securities because these instruments create an obligation for one entity to pay another entity. For this same reason, currency can be considered a security because is backed by that country's government. This backing can either be by fiat (government regulation or law) or by commodity (such as the gold standard the United States of America used to use during the Nixon administration).

Bitcoin is backed by no entity, no commodity, no organization. Bitcoin value is entirely virtual. Bitcoins do not fit with an investment contract definition and not require direct investments of money. It only requires investment of computing power. Further, while it might be said the Bitcoin community is a common enterprise, that enterprise is distributed and not run by a single individual or entity.

Bitcoins themselves are simply cryptographic strings that represent transactions; except for the willingness of some people to exchange Bitcoins for real-world money, Bitcoin valuation is incredibly difficult.

But, the fact that the commodity is virtual is not a reason to not pay VAT. Exchanges services do not actually sell bitcoins, they offer a service. They earn commissions and pay taxes on those commissions and thus create a need to include the VAT into the fee from brokering.

5. Scenarios for the future money landscape : the “denationalisation” or “deterritorialisation” of money

Technologies in use today, such as credit cards and cheques utilise computers, networks and the Internet and are tied to book-entry type clearing and settlement systems. The new environment architecture, which literally transforming money, challenges the state's monopoly and erodes or displaces the control of monetary production.

In order to apprehend the future development of money and put it into a broader perspective, we should first look at the progress of as a rough, meandering and contentious process, but with a clearly ascending trajectory. It is expected that credit cards, cash and cheques will continue to dominate, coexist and interact probably in a different mix.

It is not clear Internet barter-credit transactions might even bring about “the end of money” and the redundancy of central banks or whether electronic forms of money will lead to an increase or reduction of activities which evade monetary regulation like fraud, money laundering, tax evasion, and so on, with obvious consequences for macroeconomic management and social welfare programmes.

Supplementary, as a consequence of a broad globalisation trend, some postulates the emergence of a single global currency that will deepen economic integration, improve the stability and the security of the global economy. Nobel Prize winner, Robert Mundell, has more recently advocated for creating a composite global currency, initially backed by gold, because gold is real, valuable, recognised, exists independent of electricity, it is portable and you do not need permission and passwords to use it. Another group of economists promote re-adoption of gold as mean of payment. Again, analysts stated that this new standard, gold, as in the case of Bitcoins, could push towards deflation because it cannot

exist a sufficient quantity of gold on terra to serve population's needs, in conditions of demographical growth, as well as of productivity and trade. Secondly, gold will not represent a stable payment means and thirdly, the new created standard will be too expensive.

6. Opportunities and risks

On the positive side, the wide range of benefits from digital forms of money will include:

- It will adjust the gap between the monetary system and the intangible economy, boosting more efficiency in the procedure of resource and asset allocation.
- It will accelerate the elaboration of new innovative products and services.
- It will support the design and settlement of new viable business models and multistream revenues generation.
- It will offer speed, global reach and granularity, which will grease the wheels of the customisation of payment solution to particular customers and situations.

On the negative side, tomorrow's new forms of money will have profound economic implications that could trigger risks like enhancing the possibility for everyone to devise strategies with the only scope to engage in anti-competitive behaviour; aggravate inequality; promote instability; facilitate criminal activity; and even undermine the effectiveness of macroeconomic policy.

Additionally, electronic money, becomes practically impossible to dissociate from its technology, and this creates a strong dependency on technology and its evolution, that in turn arise weaknesses (system breakdowns, security breaches, cyber attacks).

Peter Sunde, is confident that a cashless society would have a bad outcome because everything would be traceable and you would not buy things that were controversial. Also "If everything is traceable you start thinking about your purchasing behaviour. You need cash for anonymous behaviour." Ben Milne, founder of Dwolla argued that we already lived in a cashless society: "There's no anonymity in transactions. Things go digital, and anonymity is removed. You can not do anything about it. If you have a credit card there is no such thing as anonymity."

7. Conclusions

Money itself is a multifarious phenomenon, a dynamic process that could not be put on automatic pilot. It is the support and the substance of economic exchanges.

At this moment, the nature of value determination has changed, it is no longer established by reference to objective and immutable rules and yardsticks but by a trading process, subject to chronic volatility and frequent shocks.

Economists consider money being a tool in the invisible conspicuous hands of power and deplore that this new financial system have been painted as an artificial mechanism that hypertrophies the economy, destabilises and destructures it and entails financial chaos.

And thus, the interest of technology-driven e-money (smart card-based electronic purses for small value payments, encryption software-based digital cash schemes) and other digital currencies.

Bitcoin, the new virtual currency, represents a brand young concept and a highly risky strategy, the value of which fluctuates often, it is volatile and vulnerable to small-disturbances or price manipulations and it is not backed by gold or any formal entity. Its value stems from the fact that is useful (Bitcoins have value in exchange and someone accept them) and scarce. But, the whole ecosystem surrounding bitcoin is very much still a grey area. Bitcoin is a virtual construct; it is created out of „thin air“. Rather if in some ways, Bitcoin is a pure representation of value, it has no intrinsic value other than that one person is willing to give another for the Bitcoin transfer.

As previously stated, bitcoin in theory is immune to financial speculation, its value cannot be altered or affected by external inflation, because its key feature: complete autonomy from banks and governments. When thinking in terms of greater transactional transparency and fairness, it would therefore represent a giant step forward. Even hacker Jeffrey Paul emphasized on the benefits of an informational money reform.

Bitcoin does not ask that its users trust any institution. Bitcoins are created in a regular and predictable fashion, and by many different users, so individuals are building the economy and no one can decide to make a whole lot more and lessen their value. In short, Bitcoin is designed to be inflation-proof, double-spend-proof and completely distributed, so any changes implemented to the system must be

accepted by the whole community of users, instead of a centrally-controlled currency that can be modified by its central agency without the consent of its partisans.

In the light of centralisation in payment technology, trade relations should come into view as interconnected networks, since the appearance of innovative forms of payment have to gather a general acceptance. And Bitcoins development represents a kind of collective evolution.

As Bitcoin becomes better known and more widely accepted by merchants its value should stabilize, because Bitcoins have its built-in feature, adaptability.

Furthermore, in the long term, Bitcoins, this innovation in online currencies, will have to solve the kinds of problems that confront currencies in the real world, as the vivid control exercised upon finance and thus upon economy as a whole, as anchor in payment systems, opposite to the assertion that money is neutral.

To put it in succinct, I might assess that money's destiny is to become digital.

This general conclusion emerges from an examination of money's long historical record and its likely relationship to future socioeconomic dynamism. Historically, money as a force driving economic and social change, has been on the path towards greater abstraction, or pure symbolic representation disassociated from a precise physical materialisation (clay tablets, coins, paper, book entries, plastic cards). When looking to the future, is the question of the universality and durability of money and the rate at which the last vestiges of physical money will vanish.

But, the complex monetary system quest is far from over, as long as the pace and the scope of change will be greater than now.

Conjointly, the issues mentioned in this article are far from clear because virtual currency transactions and virtual economies represent a problematic area in which technology has outpaced the law. Also levying tax is another hurdle. In this case, the interrelated set of trends and forces that affects all economic activities, changing the nature of economic transactions and market structures require a fundamental overhaul of the regulatory and institutional framework of monetary systems.

In like manner, we should to review our economic mentality, because nowadays the economic mainstream persists to conceive money and its qualities as "arsenal of stocks" or that fluctuating and capricious "flow".

Accordingly, we need to open the door to a series of technology-enabled solutions and refinements in current ubiquitous technologies, in order to provide alternatives to today's payment schemes.

To conclude, between the virtual and the concrete, money remains an object that fascinates and leaves no one indifferent, even if "money is an illusion" recalling the prominent philosopher, Aristotle. So, let be open-minded and think about the next question: Could the answer to crisis belongs to bitcoin?

8. References

- Carr, J.;Hoerner, J. and Kaplan, C.(2011) *Virtual currency in virtual economies: income characterization issues for social media companies*, Tax notes international, 64 (8), p.576-587
- Chung, P. (2008) Virtual currency :regulation and taxation issues, E-commerce, law and policy, p.8-10
- Cohen, B. (2001) *Electronic Money: New Day or False Dawn?*, Review of International Political Economy.
- Gilbert, E. and E. Helleiner, eds. (1999) *Nation States and Money*. London: Routledge.
- Greenspan, A. (1997) *Fostering Financial Innovations: The Role of Government" in The Future of Money in the Information Age*. Washington, DC: The Cato Institute.
- Kobrin, S.J. (1997) *Electronic Cash and the End of National Markets*,Foreign Policy,107, p. 65-77.
- Lederman, L. (2007) *Stranger than fiction: taxing virtual worlds*, New York University law review , 82, p.1620-1672
- Miano, T. (2007) *Virtual world taxation: theories of income taxation applied to the second life virtual economy* . Available at http://works.bepress.com/timothy_miano/1
- OECD (2002)The future of money, OECD
- Summers, L. (2012) *Bitcoin "is one of many innovative technologies that are going to seek to take friction out."* Available at <http://maxkeiser.com/2012/03/29/bitcoin-is-one-of-many-innovative-technologies-that-are-going-to-see-to-take-friction-out-larry-summers/>

- Tham, R. (2011) *Bitcoins: the politics of a virtual currency*. Available at <http://www.economywatch.com/economy-business-and-finance-news/bitcoins-the-politics-of-a-virtual-currency.13-06.html?page=full>
- Weatherford, J. (1997) *The History of Money: From Sandstone to Cyberspace*. New York: Three Rivers Press.
- https://en.bitcoin.it/wiki/Tax_compliance
- <http://blog.turbotax.intuit.com/2011/07/18/bitcoins-the-taxless-currency/>
- <http://thedailybitcoin.blogspot.com/>

QUALITY IN HIGHER EDUCATION: FROM WORDS TO REALITY

CREȚAN Georgiana Camelia

Ph. D. Teaching assistant, Faculty of Finance, Insurance, Banks and Stock Exchange/Department of Finance, Bucharest University of Economic Studies, Bucharest, Romania, georgiana_cretan@yahoo.com

CÂMPEANU Emilia Mioara

Ph. D. Associate professor, Faculty of Finance, Insurance, Banks and Stock Exchange/Department of Finance, Bucharest University of Economic Studies, Bucharest, Romania, emilia.campeanu@fin.ase.ro

CHIRILĂ Viorica

Ph. D., Assistant professor, Faculty of Economics and Business Administration/Department of Economics, Quantitative Analysis and Information Systems, Alexandru Ioan Cuza University, Iași, Romania, chviorica@yahoo.com

Abstract: *The creation of the European space for higher education also implies reaching the objective set in the Bologna Declaration to create a European dimension for quality assurance with comparable criteria and methods. In this context, the present paper aims at conducting a comparative survey on the quality of higher education and economic higher education at European level. Thus, throughout the paper, a quantification of the perception on the quality of European higher education and economic higher education is carried out, in order to group the European Union member states into classes, according to the quality level assured in this field.*

Key words: education, quality, effectiveness, efficiency, knowledge

JEL classification: A 29, H 52, I 25

1. Introduction

Sustainable development and economic competitiveness cannot be achieved without investments in human resources through allocation of funds designed to financially support both education at all levels, and the cultural and educational system through specialized institutions. This financial aid is provided through State contribution reflected in public expenditure for education, culture, research and development, and through the efforts of private entities that directly finance private educational establishments, educational programmes, cultural projects, etc. All these efforts are to be found in the public services of education, training and culture. How their usefulness is perceived largely depends on the preferences of each individual and differs depending on age, gender, social background, region etc. However, there is a common concern of all entities involved in the provision of such services to adjust themselves to local, national and international requirements, as well as to develop without affecting their quality. As for the perception on the quality of public services in education, training and culture, their examination cannot be but a subjective one, as long as it's difficult to highlight quantitative assessments for all inputs and their outcomes if designed for ongoing improvement of the quality of labor force and society as a whole.

The development of society largely depends on the education budget. The importance of this area is difficult to accurately quantify considering the end-result which is reflected in the quality of labor force. Evaluation of perception on the quality in higher education, more specifically the economic field, is more sensitive nowadays when we are all experiencing the economic and financial crisis. In addition, the perception of quality depends on the preferences of each individual and will vary depending on a series of factors. Throughout this paper, the analysis of the quality of higher education is conducted starting with strategic issues and culminates with the quantification of the perception on the quality of economic higher education. Thus, the analysis includes the European Union member states and the results are used for a comparative survey at European level.

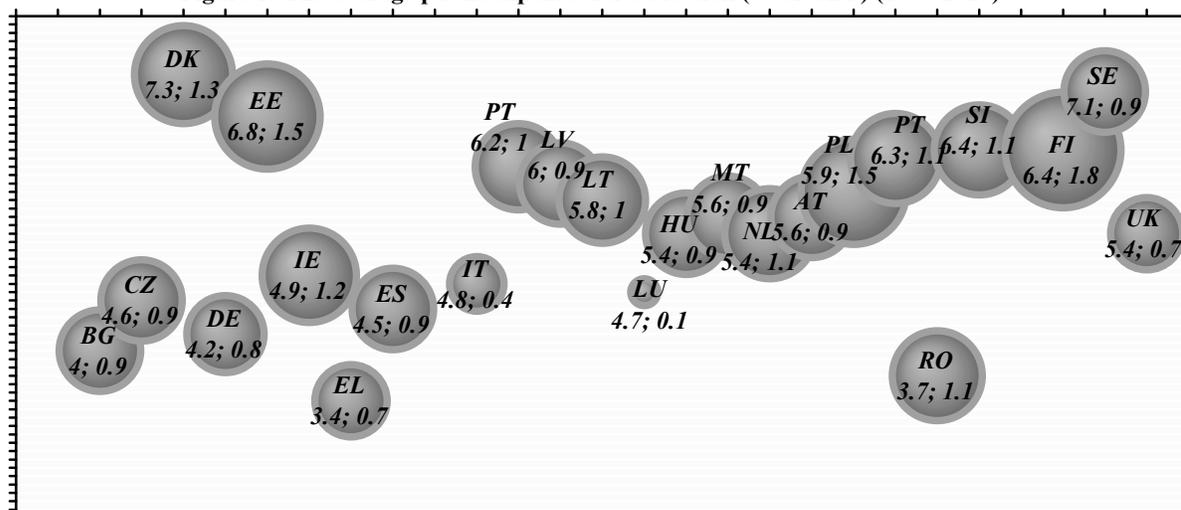
As a result, this paper is structured in five sections. The first section tackles with an introduction to costs granted to education and higher education system in particular. The third section describes theoretical issues on the quality and quality of higher education, while the second section covers an analysis at European level of the quantum of public funds in higher education based on how we define and quantify it. Section four highlights the results of our research in terms of quantifying the perception on the quality of higher education in the field of economic sciences, which allows ranking European

countries in terms of the quality each ensures in this field. The conclusions are presented in the last section.

2. Quantitative Analysis of Public Expenditure in Higher Education

In order to point out the importance of higher education, the quantitative analysis should start from expenditure in education. Expenditure can be sustained from both public funds and private financing. In the light of the available data, which arise from official comparable sources between European Union member states, we can rather access series of data regarding the public sector education. In using Eurostat data, one can ascertain that, at European Union (EU) level, the public expenses for education have a relatively constant growth of the GDP share (between 3 and 7% of GDP for overall expenses for education, and respectively 0.1 and 1.8% of GDP for overall expenses for higher education) (Figure 1).

Figure 1: The average public expenses for education (% of GDP) (1990-2010)



Source: authors' data processing as based on Eurostat.

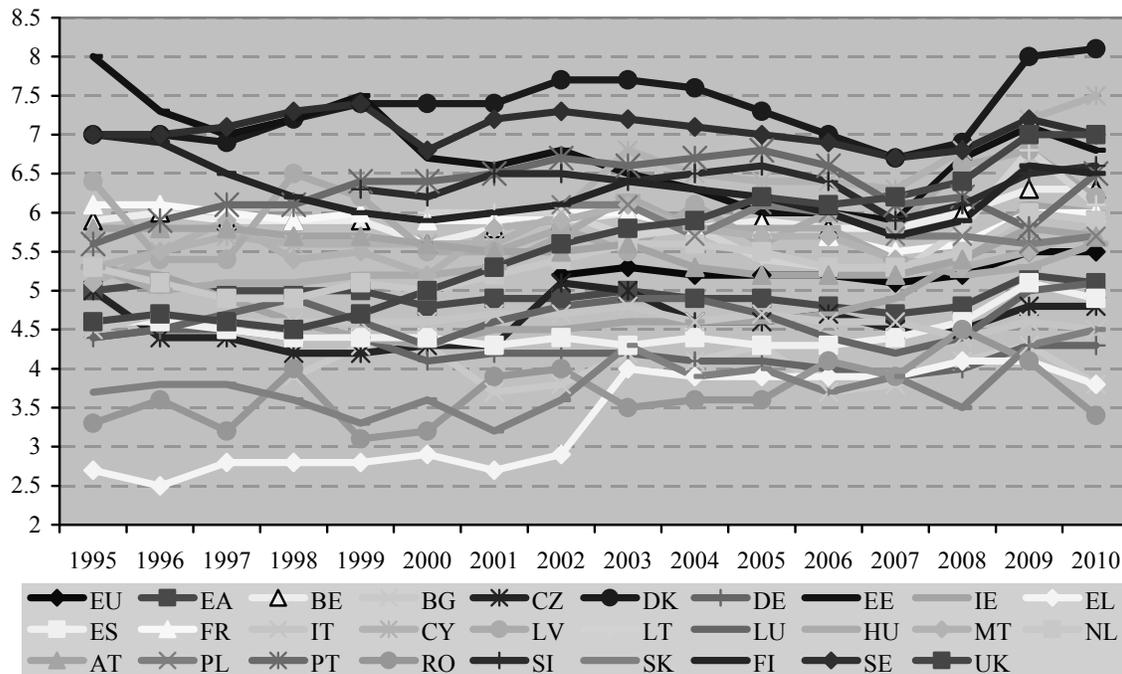
Remark: for each state, we indicate first the weight in the GDP of public expenses for education and afterwards the weight in the GDP of public expenses for higher education.

Figure 1 shows that investments in education are under the European average in Greece (3.4% of GDP), Romania (3.7) and Slovakia (3.8) if compared to the financial support that largely exceeds the average (5.4% of GDP) in Denmark (7.3% of GDP) and Sweden (7.1% of GDP). As for higher education, an under average investment is detected in Luxembourg (0.1% of GDP) and Italy (0.4% of GDP), if compared to the important financial support in Finland (1.8% of GDP) and Estonia (1.5% of GDP).

As regards the growth of expenditure on education in the long run, one can notice relatively reduced fluctuations (Figures 2 and 3). Since 2007, there has been an increasing trend with most European countries in terms of public expenditure for education, which does not apply for higher education. In this latter case, private financing of the sector of vocational training is emphasized.

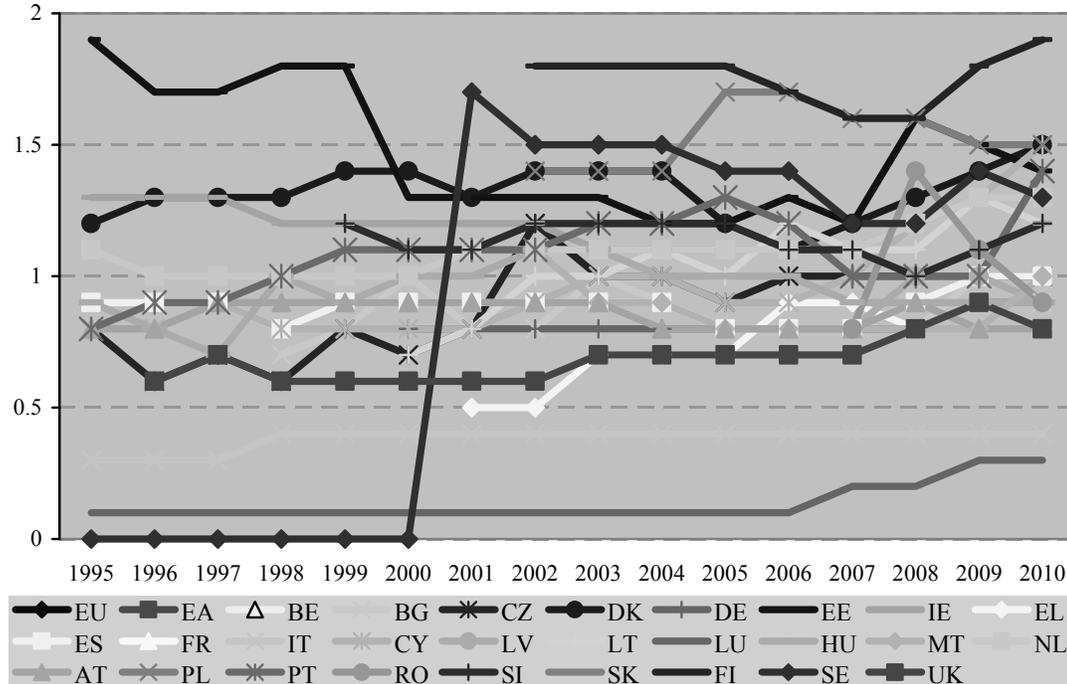
A constant increasing trend of the amounts allocated onto education is seen in the United Kingdom where we have an increase of 2 percentage points of GDP. Anyhow, there will be a significant increase in tuition fees at the level of higher education in the United Kingdom, which is planned for 2013. In the case of Romania, it is difficult to indicate a general trend as these public expenditure categories have fluctuated over the years, with increasing and decreasing trends. This is the direct result of the uncorrelated and inconsistent correlation between governmental objectives, where education is a top priority, and the amounts actually allocated from the public budget. Moreover so, in real terms, public expenses for education have decreased.

Figure 2: Evolution of public expenditure for education (% of GDP) (1990-2010)



Source: authors' data processing as based on Eurostat.

Figure 3: Evolution of public expenditure for higher education (% of GDP) (1990-2010)



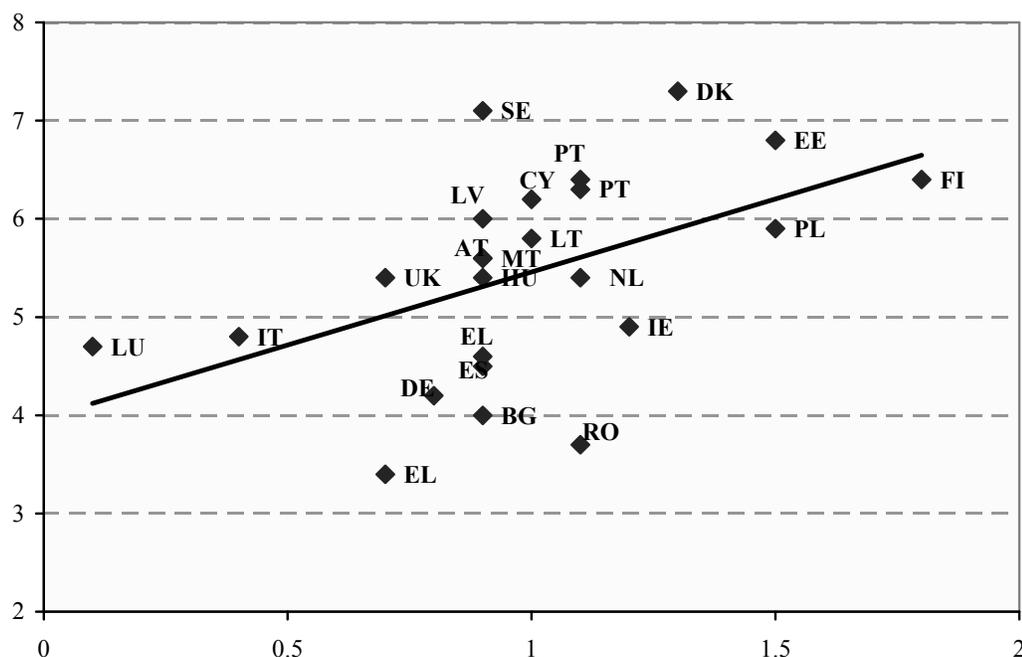
Source: authors' data processing as based on Eurostat.

Expenditure dynamics in the education system show that changes have taken place in Estonia (a decrease by 1.2 percentage points of GDP), Slovenia (an increase by 6.6 percentage points of GDP), and Lithuania (an increase by 6.1 percentage points of GDP). More precisely, 18 European member states have achieved growth if compared to the other EU states, i.e. an average 29 percentage points of GDP.

Unlike the case of these countries, reduction of public expenditure for education was, on average, 2.4 percentage points of GDP. It's a positive fact that an overall growth trend is recorded of those outlays.

As the total public expenditure for education refers to all education levels and the purpose of this paper aims at analyzing higher education, it is worth keeping track of the relationship between these variables (Figure 4).

Figure 4: The correlation between public expenditure for higher education and public expenses for education (% of GDP) (1990-2010)



Source: authors' data processing as based on Eurostat.

As based on the average rates shown in Figure 4, one can notice that those states allocating important amounts for education also provide for equivalent support to higher education. At European level, Finland allocates to higher education approximately 1/3 of public expenditure for education.

As the present paper undertakes to analyze public services for education, mainly higher education, in terms of their quality, we shall not detail on expenses in higher education considering other aspects, such as per-student allocation, number of graduates, number of enrolled students per teacher, etc. All these issues will be dealt with in another paper.

3. The Quality in Higher Education - Definition, Quantifying

Education is an important part of sustainable development in the light of integration into economy of the acquired, developed and capitalized knowledge. Therefore, education has become a distinctive component of human development, knowledge-based economy and global competitiveness, as it is included in the quantification of these indicators. It is common fact that the more we invest in education, the more good results are achieved in the medium and long term, because the effects will be seen after the graduate enters the labour market where is strong competition both at national and international, moreover so as we witness what is usually called "brain drain". This latter issue creates positive externalities for third countries that benefit from skilled labour force at the expense of investments in education made by other states. To all intents and purposes we can state that countries are not only importing/exporting goods, services, capital, but also "brain".

At the same time, education represents a strategic planning field, both at national and international levels. For this reason, a government will set its political priorities, objectives, agenda planning and bodies and authorities. All these aspects must work together in order to meet the rapport between needs, objectives, activities, achievements, results and consequences. This is about reaching the assessment criteria of those policies that allow implementation of such education strategies as: pertinence, efficiency, effectiveness, usefulness, sustainability. The above mentioned criteria are complemented by

another relevant objective that aims at ensuring and improving the quality of education, higher education included. One should not ignore that all these are to be permanently anchored in the citizens' needs and adjusted to these needs that are continuously being diversified.

Realistic and flexible rules are needed to be enforced so that the public national and international efforts be correctly perceived and acknowledged by citizens. These rules should be known, accepted and observed by the citizens who are the beneficiaries of the public services in education. This will also warrant higher confidence levels in education with favourable consequences on how quality of education is perceived. On the other hand, it's important to point out that quality perception is subjective due to factors that strongly influence individual insight.

Education creates value. But it should also allow development and innovation in a flexible background, which is also open to novelties, continuously concerned to pledge a congruent preparing of students. To this end, good operating of all mechanisms in the education system is needed. Any weakness of one mechanism shall lead to the failure of the system as a whole. For instance, even if there are highly qualified teachers both at home and abroad, who are oriented towards their students' needs, any malfunction at central level will result in a poor perception by the beneficiaries of educational services. Consequently, it is a must to reinforce strengths and correct weaknesses of the system in this constantly changing world.

Competition, coordination and integration within the education system automatically inflict targeting a higher qualitative level able to create and develop students' skills. Consequently, a medium and long term capitalization of the investment in human resources should be achieved and their preparing for employment and integration in the economic milieu. Here is the obvious rapport between education and knowledge-based economy.

All these aspects are as many challenges that involve institutional, social-economic and technological systems, as well as the human factor, which must all lead to continuous development of a background able to create knowledge to be effectively used for the purpose of economic growth. More precisely, this should warrant such public services in education aiming to knowing, doing, cooperating, being, transforming oneself and society as a whole. Observance of these pillars of education shall consequently ensure the quality of education and trigger sustainable human development.

As a result, education in all forms is an important part of:

- human development (www.undp.org);
- sustainable development (<http://www.unesco.org>);
- knowledge-based economy (<http://www.worldbank.org>);
- global competitiveness (<http://www.weforum.org>).

As education is one important part of the above mentioned, we can state that education contributes with approximately 25% to the achievement of human sustainable development, knowledge-based economy and global competitiveness.

Once the place and role of education at both national and international level have been described, the next step in our analysis is to examine how quality in higher education system is perceived. To do that, we need to answer such questions as: *What does quality in higher education mean? How can quality in higher education be determined? What is quality in higher education being perceived?* We shall endeavor to give answers to the above questions.

The quality in higher education is reason for intense debates, though a part of its elements are ignored. Quality higher education, and quality education in general, is directly associated with the system complexity, which in turn is related to the economic, political and cultural background. At the same time, the quality of the education system should target all parties involved in the process.

Such terms as efficiency, effectiveness, and performance are frequently used as synonyms to the quality of education (Adams, 1993). In a broad sense, the efficiency of an activity or resource expresses the quality to produce positive economic effects (Cerchez, 2007). Efficiency can be estimated in accordance with development of a given process and is an indicator of the performance level of that process that makes use of the lowest input in order to obtain the highest output. If, when examining the efficiency and effectiveness in higher education, we leave out certain types of efforts that are needed to get a certain result we'll be automatically led to incorrect analysis, as a result of inputs/results being limited. Furthermore, in order to determine efficiency of education, it is necessary to articulate inputs and outputs in comparable units, although quantifying some of them continues to be a challenge for researchers.

Use of the term efficiency of education and higher education respectively has two meanings: internal and external efficiency (Lockheed and Hanushek, 1994). Thus, internal efficiency of the education system strictly refers to the effectiveness of the education process, while external efficiency reflects how graduates having a certain level of expertise identify themselves - their position and role – within the productive society in drawing on the resources the state has invested in their formation.

Internal efficiency determines the ratio between the obtained results and the efforts that have been made without translating in monetary terms the elements of this rapport. It is expressed as specific indicators of efficiency in education. The quality of education is emphasized to be measured according to the results obtained throughout training and education. The issue in this case is proper definition of efficiency indicators and performance standards.

At international level, various comparatively surveys refer to the well-known education output in pre-university education systems - the scores obtained in national and international standardized tests.

At higher education level, most EU member states lay down the conditions under which public financing is directly proportional to achievement of quality standards in education. Also, in such states as Denmark, France, Greece and Romania the public funds that finance the higher education system are allocated based on a performance contract concluded between the university and the state. What differs from one country to another is either their importance in the process of fund allocation, or the period covered by the contract (Crețan and Iacob, 2009).

Nevertheless, a general consensus has been reached nowadays that aims to the dimensions of educational quality as previously described.

Today, another expression is used, that is "educational quality" (Motala, 2000), which is set as a local and national objective in also considering the international context.

As the quality in education cannot be achieved without adequate financial resources, it is normal to consider in analysis the effectiveness and efficiency of higher education where fulfillment of objectives with minimum costs is pursued.

As regards efficiency and effectiveness in the higher education system, the best connection between inputs, outputs and outcomes should be reached. Inputs are reflected by the level of expenses in the higher education system and are replicated in terms of performance, number of graduates or graduation rate and qualifications. All these issues must in turn be recovered in objective-oriented results such as welfare and improvement and growth, which are influenced by exogenous political, economic and other factors.

4. Perception of Quality in Higher Education of Economic Profile – from Words to Reality

This paper aims to also carrying out a quantitative analysis as regards perception of quality in higher education. Therefore, a series of factors should be taken into consideration, which can adequately illustrate this perception. In order to ensure comparability of data, a quality indicator of the education system is used, which is calculated and reported by the World Economic Forum (WEF) for 2011.

Calculation of indicators is made on the basis of an own methodology that serves the purpose of the research undertaken in this paper. Therefore, a calculation has been performed of the optimal rating that reflects perception of quality in higher education, as based on the available data in each member state of the European Union. This ratio is called the quality in overall higher education and is obtained as a composite indicator made up of the quality in the education system, the quality in the higher education of economic profile system, the quality in the scientific research institutes, the cooperation between universities and the private sector in R&D projects and the "brain drain".

By including these indicators we'll get a score able to offer an overview on the quality in higher education. Based on the data, a ranking at the level of EU member states has been compiled as regards the quality level in higher education, aimed at pooling countries in five classes (Figure 5), namely:

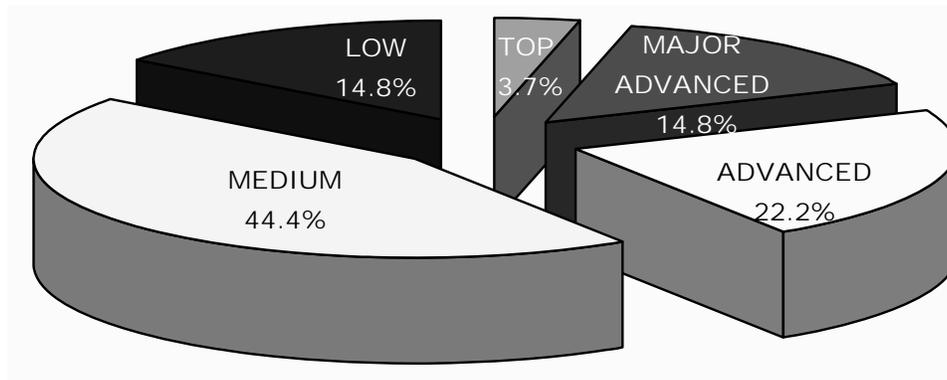
1. Top higher education system as regards perception of quality in: Great Britain. The score is 5.7 out of a maximum of 7 points;
2. Major advanced higher education system as regards perception of quality in such countries as Sweden, Belgium, Finland, and the Netherlands. The score is 5.5 out of a maximum of 7 points;
3. Advanced higher education system as regards perception of quality in such countries as Denmark, Germany, Ireland, Austria, France and Luxembourg. The score is 4.9 out of a maximum of 7 points;

4. Medium higher education system as regards perception of quality in such countries as Estonia, Portugal, Malta, Cyprus, Spain, the Czech Republic, Slovenia, Hungary, Lithuania, Latvia, Poland and Italy. The score is 4.0 out of a maximum of 7 points;

5. Low higher education system as regards perception of quality in such countries as Slovakia, Bulgaria, Romania and Greece. The score is 3.1 out of maximum of 7 points.

In order to get an outlook on the situation of higher education of economic profile, the same methodology has been applied and a rating on perception of quality level has been obtained, as well as a ranking of the EU member states. The results are shown in Figure 6.

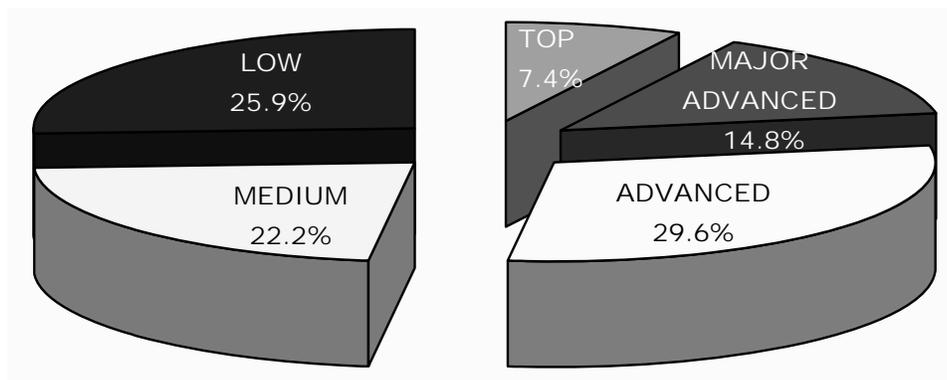
Figure 5: European ranking of perception on quality in higher education and pertaining rating (2011)



Source: processed by the authors as based on data from la WEF.

Remark: for each rank, the pertaining score is indicated on a scale from 7 maximum to 1 minimum.

Figure 6: European ranking of perception on quality in higher education of economic profile and pertaining rating (2011)



Source: processed by the authors as based on data from la WEF.

Remark: for each rank, the pertaining score is indicated on a scale from 7 maximum to 1 minimum.

As can be seen from simply comparing this ranking, a change in country classification can be ascertained that warrants higher education system with relevant levels as regards perception of quality. These ranks are as follows:

1. Top higher education system of economic profile as regards perception of quality in Belgium and the United Kingdom. The obtained score is 6.1 out of a maximum of 7 points. The United Kingdom continues to rank first as regards higher education system of economic profile with over 86% of a higher education system of economic profile with a maximum score regarding perception of quality;
2. Major advanced higher education system of economic profile as regards perception of quality in such countries as Spain, France, the Netherlands and Sweden. The obtained score is 5.6 out of a maximum of 7 points. Sweden and the Netherlands maintain their rankings, but other countries are also included here. Spain, for instance, has an average advanced level of quality perception for the higher education system of economic profile, if compared to the medium level with the overall higher education system. The education system in France comes under a better ranking with regards the higher education system of economic profile;
3. Advanced higher education system of economic profile as regards perception of quality in such countries as Finland, Denmark, Portugal, Ireland, Austria, Germany, Italy and Malta. The score is 5.0 out of a maximum of 7 points. The states that keep their ranking are Denmark, Ireland, Austria and Germany, while the other countries score a more favorable appreciation with the higher education system of economic profile. Finland has an overall education system that is appreciated to rank at a major advanced level as regards the higher education system, but without excelling in the economic field;
4. Medium higher education system of economic profile as regards perception of quality in such countries as Cyprus, Estonia, Slovenia, Luxembourg, Lithuania and Latvia. The score is 4.4 out of a maximum of 7 points. Of these countries, Luxembourg has lost one rank at the higher education system level, economic profile.
5. Low higher education system of economic profile as regards perception of quality in such countries as the Czech Republic, Hungary, Poland, Romania, Bulgaria, Greece and Slovakia. The score is 3.8 out of maximum of 7 points. Downgrading has taken place in such cases as the Czech Republic, Hungary, Poland, having a general higher education system that is considered better than their education of economic profile.

With the help of these indicators which reflect the perception of quality in higher education system, we can also pinpoint the existing differences between EU member states, as well as their majors at the level of certain fields as outlined above.

5. Conclusions

The comparative analysis of the efforts that the EU member states undertake to finance their education systems, and mainly the higher education systems, shows that those countries allocating important amounts out of the public budget to the education system can also ensure adequate support for the higher education system. The Northern countries fall under this category.

As education is included in the calculations of such diverse indicators as human development, sustainable development, knowledge-based economy and global competitiveness, this becomes an important part, which contributes by 25% to the accomplishment of human, sustainable development, knowledge-based economy and global competitiveness. The more we invest in education, the more obvious the good results/effects in the medium and long run will be.

Ensuring the quality of higher education system requires adequate financial resources. Their optimal level should be correlated with the results that educational activity generates. In other words, the internal efficiency of the higher education activity gives back the quality level ensured by a particular system of higher education.

Regarding the analysis of the perception of quality in higher education, an overview was determined on the quality in higher education system and also higher education of economic profile, as well as a ranking of the qualitative level of higher education system and higher education of economic profile. Thus, from the viewpoint of perception of quality in higher education system and higher education of economic profile, the United Kingdom ranks first, with Slovakia, Romania, Bulgaria and Greece at the opposite end.

Research in this area may proceed with the investigation of the relationship between the differences in higher education systems of European Union member states and the quality level in higher education, as a whole or in different fields of study.

6. Acknowledgements

The contributions to this paper of authors Câmpeanu Emilia Mioara and Chirilă Viorica describe the results of the research undertaken within the multidisciplinary creation campus, *Determination of the perceived quality of economic higher education in Romania, in the context of alignment to the European Union standards*, within project SOPHRD/89/1.5/S/59184. This paper is co-financed from the European Social Fund through the Sectoral Operational Programme Human Resources Development 2007-2013, project SOPHRD /89/1.5/S/59184, „Performance and Excellence in Post-doctoral Research in Economic Sciences in Romania”.

7. References

- Adams, D. (1993) *Defining educational quality. Improving Educational Quality Project*, Biennial Report, Institute for International Research
- Cercez, O. (2007) *Eficiența economică a comerțului exterior*, Editura Logos, București
- Crețan, G.C., Iacob, M. (2009) *Tendencies In Funding European Higher Education*, Theoretical and Applied Economics, Asociația Generală a Economistilor din România - AGER, vol. 12(12(541)(s)), pages 187-193, December
- EFA (2005), *Understanding education quality*, chapter 1 in Global Monitoring Report
- Green, D. (1994) *What is Quality in Higher Education?*, published by Society for Research into Higher Education & Open University Press
- Lockheed, M., E., Hanushek, E. (1994) *Concepts of Educational Efficiency and Effectiveness, Human Resources Development and Operations Policy*, World Bank
- Moșteanu, T., Câmpeanu, E., Cataramă, D., Stoian, A. și Gyorgy, A. (2006) *Politici și tehnici bugetare*, Editura Universitară, București
- Motala, S. (2000) *Education transformation and quality: The South African experience*, paper presented at the Annual Meeting of the Comparative and International Education Society
- UNICEF (2000) *Defining Quality in Education*, a paper presented by at the meeting of The International Working Group on Education Florence, Italy, June
- World Economic Forum (2011) *The Global Competitiveness Report 2011-2012*.

TO WHAT EXTENT THE DIMENSION OF THE FACULTATIVE PENSIONS FUNDS IS INFLUENCED BY THE PLACEMENTS OF THEIR ASSETS? STATISTICAL STUDY IN ROMANIA

CRISTEA Mirela

Ph. D. Associate professor, Faculty of Economics and Business Administration, Finance, Banking and Analysis Department, University of Craiova, Craiova, Romania, mirelas.cristea@gmail.com

MARCU Nicu

Ph. D. Professor, Faculty of Economics and Business Administration, Finance, Banking and Analysis Department, University of Craiova, Craiova, Romania, marcu.nicu@yahoo.com

SIMION Mircea Laurențiu

Ph. D. Student, Faculty of Economics and Business Administration, Finance, Banking and Analysis Department, University of Craiova, Craiova, Romania, mirceasimion@yahoo.com

Abstract: *The main objective of this paper is to determine in what extent the dimension of the facultative pension funds in Romania is influenced by their investment allocation. The research methodology consists in testing the net asset of the facultative pensions, as dependent variable, in relation with their investment allocation: bank deposits, government securities, municipal bonds, corporate bonds, supranational bonds, shares, and Undertakings for Collective Investment in Transferable Securities, as independent variables. The results obtained allows the orientation of making placements with the total net assets of the facultative pension funds depending on the influence only of the five variables.*

Key words: facultative pension funds, net assets, investments, statistical correlations, linear regression method

JEL classification: C 15, G 23

1. Introduction

The economic-financial crisis at the international level considerably reduced the value of the private pensions funds assets within the majority of countries "...by around 20-25% on average according to the latest oecd figures" (Antolin and Stewart, 2009).

Despite the major problems of the worldwide crisis, the retirement systems from the whole world are confronted with specific difficulties that will accentuate the following years. It is about the demographic tendencies regarding the population process of aging, together with the decrease of the birth rate, the growth of the average life expectancy, the inflation, the higher costs for the post-active period, the early retirement, the growth of the life quality and, not at last, the decrease of the dependence rate (reducing the number of the taxpayers and increasing the number of the retired persons). In a classification made by the Organization of the United Nations in 2009 regarding the position occupied by every country from the percentage of the population over 60 years old in the total number of the population point of view, Romania is on the 29th position from the 196 countries from the classification, with a percentage of the population over 60 years old of 20% at the end of the year 2009. The first position is occupied by Japan with a percentage of the population over 60 years old of 29.7% and the last position is Qatar, with a percentage of 1.9% (United Nations, 2010).

In Europe, „the highest value for the life expectancy at birth for the year 2007 was in Italy (81.6 years old), followed by Sweden (81.1 years old), Spain (81.1 years old) and Holland (80.4 years old).” (Pop, 2010). The lowest life expectancy from Europe was in the following countries in 2007: Latvia – 71.2 years old, Lithuania – 70.1 years old, Romania – 73.2 years old, Bulgaria – 73 years old and Estonia – 73.1 years old.

According to the National Institute of Statistics, the average life expectancy in Romania in 2008 was 73.03 years old, the average life expectancy for women was 76.68 years old and for men was 69.49 years old (National Institute for Statistics, 2009). In Romania, about 19.2% from the total population is over 60 years old, while the studies show that the percentage will go up to 22% in 2030 (CSSPP, 2007).

Taking into consideration these matters, “the private pensions are necessary to diversify the sources of income at retirement and, as such, they complement public pensions” (Antolin and Stewart, 2009).

Regarding the organization of the retirement systems at an international level, they mainly represent a combination of their public and private structure. Currently, a popular version of the retirement systems is a minimum pensions, assured through the public system of retirements, known as the PAYG system, completed by a private pension, based on the subscriber’s contribution, the states being in different stages of development: the accumulation stage or the benefits’ payment stage.

In Romania, the retirement system is structured after the model proposed by the World Bank, that is the system of the three pillars, as follows:

The public system of pensions represents the first pillar and foresees the retirement at the age of 65 years old for men and 63 years old for women, with a constant growth of this age till January 2015 for men and January 2030 for women;

The private pensions system, with its two components: The second pillar – the compulsory component with a private administration, known as pensions funds with private administration, launched in May 2008; The third pillar – the facultative component with private administration, known as facultative pensions funds, launched in May 2007. Within an adequate legal frame and some rules to administrate the funds, these retirements funds from Romania should efficiently complete the public pensions component, affected by the worldwide problems.

Reducing the value of the private retirement funds’ assets influence, on one hand, their solvability and the level of financing the pensions plans with defined benefits (db). On the other hand, the private pensions plans with defined contributions are affected (dc), through the decrease of the cumulated values in the accounts of the insured persons.

Taking into consideration the structure of the facultative investments funds, through this study we will test to what extend their net assets are influenced or not by every form of placement and what the causal relation is.

2. Theoretical background

In the conditions of the current economical-financial crisis, its effects determined a reallocation of the investments of the retirement funds’ assets towards investments with low risk “causing a shift in asset allocation patterns, with investors moving into more conservative investments” (Antolin and Stewart, 2009).

Clark and Urwin, searching to find the best practices for the assets management, showed a strategic mix of the assets’ investment, adapted in time that would create opportunities to obtain an added value. “belief that asset classes can be temporarily expensive, or cheap, suggests a dynamic medium-term approach to asset allocation based on relatively frequent assessment of relative value” (Clark and Urwin, 2007).

In the paper about the description of the worldwide private pensions systems, Tapia made “a comparative study on the regulation of private pension systems across a range of countries, with highest income in OECD countries”. This study offers for each analyzed country “...information on members’ participation; contribution rates, asset management, investment regulations, asset valuation and investment return regulations” (Tapia, 2008), the conclusion being that the pensions funds investments within a majority of countries are made with the respect of some prudential laws of investments.

Even though the European Union already established some comprehensive prudential norms for banks, insurance companies, investment companies and investment funds, the supplementary pensions funds remained the only major financial institutions that will be exclusively regulated at a national level.

Some member states of the European Union foresaw a variety of limits of rigid regulations of the pensions funds. These can be:

- Rules that impose a minimum for the investments in State bonds or governmental capital projects, such as houses, for instance. Till recently, France imposed that minimum half of the pensions funds shares were to be owned in State bonds;
- Rules to limit the ownership of assets with fluctuating incomes: shares, real estate, external assets, emergent economies. For instance, Germany limits to 30% the investments in shares to the societies from the European Union.

The major justification of the member states for imposing such restrictions is the fact that these protect the pensions funds beneficiaries. More realistic, some rules, in fact, assume an important role in

assuring a trusted public source for financing through State titles. For instance, the retirement houses from France have to invest at least 50% of their assets in State titles. At the same time, other states block all the alternative routes of investments such as the international diversification and do not leave any choice for the funds' managers in investing in governmental bounds.

The national pensions systems present essential difficulties for the cross border transfer schemes. On the other hand, the difficulties to adhere to a supplementary pension system established in other member state stumbles the working force mobility. Moreover, the companies that operate in several member states are obliged to establish a pensions' fund in every member state and don't have scale economies that they could obtain by using a single fund. The restrictions lead to the growth of the contributions that will be paid by the employers so as to assure themselves that their employees will receive a satisfactory income at their retirement. These lead to the growth of the working force costs and limit the creation of working places within the European Union.

Sharpe affirmed that „It is widely agreed that asset allocation accounts for a large part of the variability in the return on a typical investor's portfolio. Asset allocation is generally defined as the allocation of an investor's portfolio among a number of "major" asset classes. Once a set of asset classes has been defined, it is important to determine the exposures of each component of an investor's overall portfolio to movements in their returns.” (Sharpe, 1992).

Regarding the placements of the pensions funds assets, they „should be encouraged to follow prudent asset allocation strategies, which avoid large swings in funding levels, again limiting potential claims and making the guarantee scheme.” (Stewart, 2007).

“Almost all governments and, in particular, those of developing countries, impose some restrictions on the portfolio composition of pension funds. In particular, tight limits are commonly imposed on international investment.” (Zalewska, 2006, p. 339).

Antolin and Stewart affirmed that “Pension fund risk management needs to be strengthened to reduce exposure to unduly risky investments” (Antolin, Stewart, 2009).

3. Description of concepts and data used for the analysis

The facultative pension funds dimensions are appreciated through *the value of the total net assets*, that can be determined as a difference between the value of the total assets and that of the bonds. The investments made from the assets of these funds are regulated, supervised and are made according to different risk classes for every fund (high, medium and low risk), within the conditions of efficiency and prudence.

The participants to the facultative pensions funds in Romania can be those persons that make a profit from professional activities, paying individual or common contributions, with the condition that the level of the contributions do not exceed 15% from the gross salary income of each one. To benefit from an facultative pension, *the legal conditions* impose that each participant has *at least 90 monthly contributions* to a fund (not necessary consecutive), *an age of at least 60 years old* and *a minimum accumulated amount*.

In choosing an facultative pensions fund we have to take into consideration the report between risk and efficiency. The highest risk degree is represented by the shares funds that depend on the stock exchange and the most balanced report risk/efficiency is the case of the diversified funds.

The manager of every pensions fund disposes of his own politics of investments, establishes some rules of investment for the net assets, referring to: the strategy of investment of the assets reported to the nature and length of time of the bonds, with the respect of the maximal limits imposed by the legislation; the methods of investments risk evaluation; the management procedures of the risk; the method of revision of the investment rules; the responsible persons for taking decisions and making investments, the procedures for taking decisions (art. 86 and 87 from the law no 204/2006 regarding the facultative pensions, with the ulterior modifications and completion).

Thus, the investments of the assets of the facultative pension funds, according to the law, are made in the following types of placements:

Instruments of the monetary market, including accounts and deposits in lei to a bank, a Romanian legal person or a branch of a foreign institution of credit authorized to function on the Romanian territory, without exceeding a percentage higher than 20% of the total value of the assets of the facultative pensions fund;

Government securities issued by the Public Finances Ministry of Romania, issued by the European Union member states or the states from the European Economic Space, in a percentage up to 70% from the total amount of the assets of the facultative pensions fund;

Bonds and other securities issued by the local public administration authorities from Romania, the European Union member states or the European Economic Space, in a percentage up to 30% of the total amount of the actives of the facultative pensions fund;

Securities traded on regulated markets and supervised from Romania, from the European Union's member states or the states of the European Economic Space, in a percentage up to 50% from the total amount of the assets of the facultative pensions fund;

Government securities and other securities issued by the third states in a percentage up to 15% of the total value of the assets of the facultative pensions fund;

Bonds and other securities traded on regulated and supervised markets, issued by the public administration authorities from third states in a percentage up to 10% of the total amount of the assets of the facultative pensions fund;

Bonds and other securities of the nongovernmental foreign organisms, if these instruments are rated to the authorized stock exchange and fulfil the rating demands, in a percentage up to 5% of the total amount of the assets of the facultative pensions fund;

Shares issued by collective investment organisms in securities from Romania or other countries, in a percentage up to 5% of the total amount of the assets of the facultative pensions fund;

Other ways of investments regulated by the law.

In Romania, the main indicators of the facultative pension funds (the third pillar) were the following, at the end of June 2011, according to the reports of CSSPP (extracted from the Information bulletin, CSSPP, IV year, no 6/2011):

- a number of 13 active pensions funds, administrated by 10 companies, divided on three risk companies depending on the placements made: funds with low risk (a number of 3 funds), with average risk (8 funds) and funds with high risk (2 funds);
- a number of participators in the facultative pensions funds, of 241,408, rose with 8.94% compared to the end of the year 2010 (December), with 19.56% compared to June 2010 and with 1.57% compared to the previous month;
- the net assets with a value of 91 million euro rose with 50.37% compared to June 2010, with 17.48% compared to December 2010 and with 2.55% compared to the previous month;
- from the total of the net assets of the facultative pensions funds, 89.96% were placed in the country and the rest of 10.14% represented foreign investments, from which 9.57% represented EU investments and 0.75% represented investments in third states.

The evolution of the net assets of the facultative pensions funds during the period of their collecting, from the setting up to the date of making this analysis, is foreseen in the Annex no 1.

The placements of the net assets of the facultative pensions funds in Romania depending on the categories of investments allowed by law is presented in the Annex no 2.

Thus, according to the Annex no 2, the structure of the facultative pension funds portfolio at the end of June 2011 was the following:

- Government securities: 65.52% of the total funds assets, with a decrease compared to June 2010 (66.22%) and December 2011 (65.85%);
- Supranational bonds: 3.68% of the funds assets, with a growth compared to June 2010 (1.18%) and December 2010 (2.94%);
- Municipal bonds: 1.52% of the total funds assets, with a decrease compared to June 2010 (2.55%) and December 2010 (1.65%);
- Corporate bonds: 6.99% of the total funds assets, with a decrease compared to June 2010 (7.98%) and a growth compared to December 2010 (6.58%);
- Bank deposits: 6.65% of the total funds assets, with a decrease compared to June 2010 (8.64%) and December 2010 (8.48%);
- Shares: 15.07% of the total funds assets, with a growth compared to June 2010 (11.41%) and December 2010 (14.10%);
- Undertakings for Collective Investment in Transferable Securities, UCITS: 1.25% of the total funds assets, with a growth compared to June 2010 (0.39%) and December 2010 (0.57%).

For the analysis we use the data issued by the Private Pension System Supervisory Commission for the period September 2007- June 2011 (research applied for a number of 44 monthly observations).

The variables used for testing the statistical correlations are:

- Net asset of the facultative pensions, as a dependent variable (its value for the analysed period, September 2007- June 2011, can be found in the Annex no 1);
- Investments of the assets of the facultative pension funds, on categories of placements: bank deposits, government securities, municipal bonds, corporate bonds, supranational bonds, shares, Undertakings for Collective Investment in Transferable Securities, UCITS, as independent variables (values found in the Annex no 2).

To identify the best combination between the independent variables that explains the dependent variable variation, we analyzed the statistical correlation between these variables, using the equation of the linear multiple regression.

4. Results and discussion

Regarding the analysis of the correlation between the dependent variable, the value of the net asset of the facultative pension funds and the independent variables: bank deposits, government securities, municipal bonds, corporate bonds, supranational bonds, shares, Undertakings for Collective Investment in Transferable Securities - UCITS, we obtained the indicators from the Table 1.

The Table 1 shows us that in the first model all the independent variables were introduced and then, in the Model 2, the independent variable “shares” was eliminated, because it has no influence on the value of the net asset of the facultative pension funds. Within the third stage, the second independent variable “bank deposits” will be eliminated, because its insignificant influence on the net asset value.

Table 1: Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	UCITS, Bank deposits, Corporate bonds, Supranational bonds, Municipal bonds, Government Securities, Shares ^a		Enter
2		Shares	Backward (criterion: Probability of F-to-remove >= .100).
3		Bank deposits	Backward (criterion: Probability of F-to-remove >= .100).
a. All requested variables entered			
b. Dependent Variable: Value of the net assets of the facultative pension funds			

In the second table, the value of the correlation coefficient (R), the value of the determination report (R Square) and the standard error are presented for each model of multiple linear regression.

Table 2: Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.970 ^a	0.940	0.922	26.044679	
2	0.970 ^b	0.940	0.925	25.499807	
3	0.970 ^c	0.940	0.928	25.062083	1.301

a. Predictors: (Constant) UCITS, Bank deposits, Corporate bonds, Supranational bonds, Municipal bonds, Government securities, Shares

b. Predictors: (Constant), UCITS, Bank deposits, Corporate bonds, Supranational Bonds, Municipal bonds, Government securities

c. Predictors: (Constant), UCITS, Corporate bonds, Supranational bonds, Municipal bonds, Government securities

d. Dependent Variable: Value of the net assets of the facultative pension funds

The interpretation of the resulted three models of correlation is the following:

- The model 1 presents the dependence between the *net asset* and all the independent variables: *UCITS, Bank deposits, Corporate bonds, Supranational Bonds, Municipal bounds, Government securities, Shares*, for which we have a correlation coefficient of 0.970 and a determination report of

0.940. These values show the existence of a direct and powerful correlation between the analyzed variables, because 94% of the total net assets variation is explained based on the modification of all independent variables, but we make the test further on to see if we can find a better model;

- In the Model 2 we eliminate the first independent variable, *shares*, and for the remained variables within the Model we have the same correlation coefficient of 0.970, but a better determination report of 0.925. This means that 92.5% of the variation of the total net assets is explained through the variation of the six independent variables: *UCITS*, *Bank deposits*, *Corporate bonds*, *Supranational bonds*, *Municipal bonds*, *Government securities*. Moreover, through the elimination of the first independent variable from the regression model, the standard error of estimation decreases from 26.044679 to 25.499807;

- The Model 3 eliminates the second independent variable – *investments in bank deposits*, leading to a value of the correlation coefficient of 0.970 and a report of determination of 0.928. The Durbin-Watson coefficient is under the value of 1.5, what means that the model can be validated. Through this model the modification of the total net assets of the facultative pension funds is explained in a percentage of 92.8%, being considered the most comprehensive.

The regression coefficients calculated for each of the three models are presented in the table 3.

Table 3: Regression coefficients for the dependent variable net assets of the facultative pensions funds

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1184.138	504.239		2.348	0.028		
	Bank deposits	-1.461	4.589	-0.048	-0.318	0.753	0.115	8.691
	Government securities	-11.812	5.434	-0.540	-2.174	0.040	0.042	23.798
	Municipal bonds	-31.237	6.809	-1.060	-4.588	0.000	0.049	20.584
	Corporate bonds	-9.110	7.393	-0.396	-1.232	0.230	0.025	39.924
	Supranational Bonds	-18.135	7.534	-0.245	-2.407	0.025	0.250	3.992
	Shares	-0.484	6.085	-0.021	-0.079	0.937	0.038	26.435
	UCITS	144.506	32.426	0.358	4.456	0.000	0.401	2.493
2	(Constant)	1155.946	350.789		3.295	0.003		
	Bank deposits	-1.197	3.100	-0.039	-0.386	0.703	0.242	4.136
	Government securities	-11.577	4.464	-0.529	-2.593	0.016	0.060	16.751
	Municipal bonds	-30.972	5.810	-1.051	-5.331	0.000	0.064	15.635
	Corporate bonds	-8.690	5.054	-0.378	-1.719	0.098	0.051	19.466
	Supranational bonds	-17.917	6.869	-0.242	-2.608	0.015	0.289	3.462
	UCITS	144.083	31.317	0.357	4.601	0.000	0.412	2.426
3	(Constant)	1048.527	209.995		4.993	0.000		
	Government securities	-10.286	2.905	-0.470	-3.541	0.002	0.136	7.342
	Municipal bonds	-31.684	5.415	-1.075	-5.852	0.000	0.073	14.058
	Corporate bonds	-7.284	3.447	-0.317	-2.113	0.045	0.107	9.375
	Supranational bonds	-16.647	5.927	-0.225	-2.809	0.010	0.375	2.669
	UCITS	146.797	29.995	0.364	4.894	0.000	0.434	2.303

T test and the Sig. value serve to test the regression coefficients, representing the hypothesis that there is no significant connection between the dependent variable and the independent variables. In this study, the t test has high values for each variable and Sig has very low values (under 0.05), what allows us to reject the hypothesis that there is no significant connection between the analyzed variables, meaning small errors that could appear due to some alleatory measurements.

We can remark that, the influence of the five selected variables on the value of the net asset of the facultative pension funds is very good (Sig.<0.05), and the tolerance is higher than (1-Adjusted R square) $1 - 0.928 = 0,072$, for every dependent variable, what goes to the *elimination of the un-collinear risk*.

VIF (Variance Inflation Factor = $1/\text{Tolerance}$) helps us in the analysis of collinearity, expressing the un-collinearity if it exceeds the value 10. In this case, for four of the five variables included into model (*investments in UCITS, corporative bonds, supranational bonds and government securities*), VIF is lower than 10, what implies the certitude that there is no un-collinearity for these variables. For the *investments in municipal bonds*, VIF is higher than 10, but, for this, the Sig value (the significance degree) and the tolerance value have values within the admissible limits. Thus, the parameters of the statistic analysis correspond to the conditions regarding the development of an optimal analysis.

Based on the calculated coefficients that we can find in the B column of the Table 3, the linear model of multiple regressions, identified for the studied variables, is presented in the equation 1.

$$Y = -10.29 \cdot X_1 - 31.68 \cdot X_2 - 7.28 \cdot X_3 - 16.65 \cdot X_4 + 146.797 X_5 + 1048.527 \quad (1)$$

where: Y – total net asset of the facultative pensions funds;

X_1 – investments in government securities;

X_2 – investments in municipal bonds;

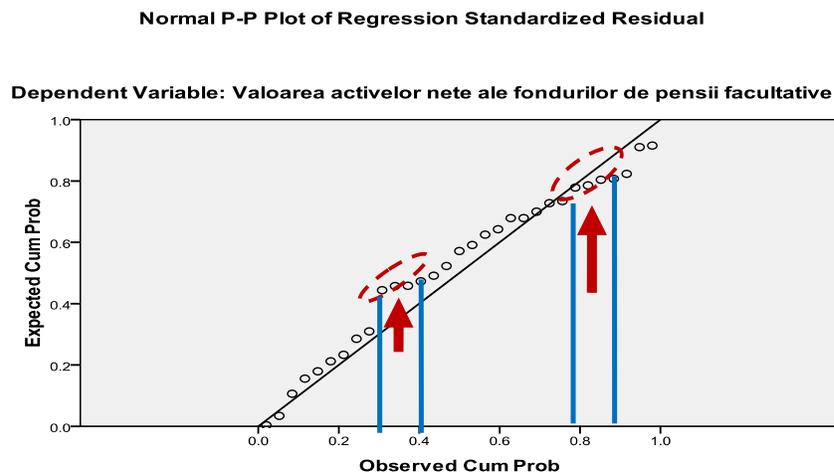
X_3 – investments in corporate bonds;

X_4 – investments in supranational bonds;

X_5 – investments in UCITS.

In the Figure no 1 we represented the residues through comparison with the normal repartition law. The residues represent observable and measurable estimations of the hard to observe statistical errors.

Figure 1: Graphic P-P of the standard residues from the regression



From the Figure 1, we can observe that the residues respect the normal distribution law (empiric observation, based on the comparison of the marked points through their report to the line drew depending on the evolution of these points). Thus, **the regression equation can be applied**. We can mention that on the interval 0.3-0.4 and 0.8-0.9 (20%) of the analyzed cumulated probabilities, the normal distribution law is not respected, what intensifies the error present within the obtained linear regression equation. For the rest of the probabilities interval (80%), the normal distribution law is respected.

5. Conclusions

The obtained multiple linear regression equation allows the orientation of making placements with the total net assets of the facultative pension funds depending on the influence of the five variables selected in the model.

The interpretation of the coefficients of the obtained equation (equation no 1) reveals that, based on the analyzed data for the period September 2007 – June 2011, on a short horizon of time, the following correlations can be seen:

- if the investments in government securities grow with a percentage, the value of the total net asset decreases with 10.29 million lei;
- if the investments in municipal bonds grow with a percentage, the value of the total net asset decreases with 31.68 million lei;
- if the investments in corporate bonds grow with a percentage, the value of the total net asset decreases with 7.28 million lei;
- if the investments in supranational bonds grow with a percentage, value of the total net asset decreases with 16.645 million lei;
- if the investments in UCITS grow with a percentage, the value of the total net asset rises with 146.797 million lei.

According to the analysis made, we have to take into consideration that on a short horizon of time, an increasing of the investments in government securities, municipal bonds, corporate bonds and supranational bonds will determine a decrease of the net asset of the facultative pension funds, while an increase of the investments in UCITS will determine a growth of the net asset of the facultative pension funds, effect that has to be counteracted through a reallocation of the investments of the pension funds towards placements that assure a better efficiency.

Moreover, the analysis demonstrates that we can not establish a causality relation between the total net assets of the facultative pension funds and their placements in bank deposits and shares.

For the insurers the contribution to a single private pensions fund is recommended and once with getting old, they have to choose a fund with low risk, less volatility, a small efficiency, but very sure. If the youngsters can choose funds with higher placements in shares that bring high profits, with high risks, the elderly people have to be more attentive with this money, because it will be more difficult for them to retrieve the losses within the portfolio.

That's why, to counteract the effects of the decreasing of the value of the net assets of the facultative pension funds, we have to make a mix of their placements, on a short horizon of time, dynamic and adaptable to the variations of their influence factors, such as Sharpe affirmed in his paper about the allocation of the pension funds assets, that the structure of their placements „can be aggregated to determine the investor's overall effective asset mix” (Sharpe, 1992). Thus, opportunities will be created so as to obtain a better efficiency of the pension funds and to counteract the reduction of the value of the insurers' contributions to these pension funds.

It is sure that the value of the pension funds critically depends on their assets placements and implicitly, on the performances of these investments. So as to try and protect the insurers' economies, the governments establish strict rules for the investments of the pensions' funds, especially then when the contributions are compulsory. For instance, the new system of pension funds from Latin America and Eastern Europe is more strictly regulated than those from the OECD countries, which are mainly voluntary pension funds.

The regulation of the pension funds performances recommended by the World Bank represents a guarantee that imposes an efficiency that the pension funds have to obtain.

6. Acknowledgments

This paper is supported by the sectorial operational programme human resources development (sop hrd), financed from the european social fund and by the romanian government under the contract number sop hrd/89/1.5/s/62988.

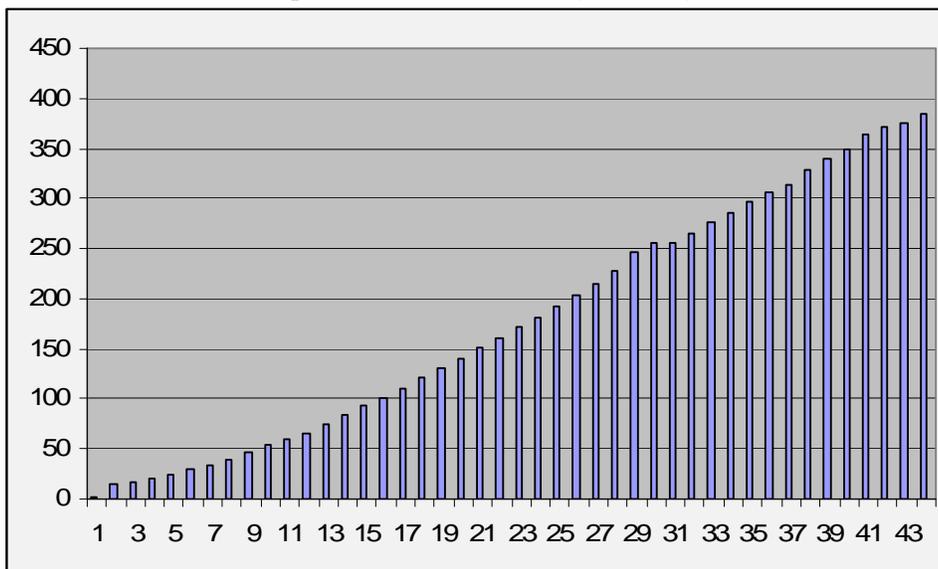
7. References

- Antolin, P.,; Stewart, F. (2009), *Private Pensions and Policy Responses to the Financial and Economic Crisis*, OECD Working Papers on Insurance and Private Pensions, No. 36, OECD publishing, © OECD, doi: 10.1787/224386871887
- Clark, Gordon L.,; Urwin, R. (2007), *Best-Practice Investment Management: Lessons for Asset Owners from the Oxford-Watson Wyatt Project on Governance*, October 2007, available at SSRN: <http://ssrn.com/abstract=1019212>
- Pop, C. E. (2010), *Starea de sănătate a populației din România în context european. O abordare din perspectiva calității vieții*, Quality of Life Journal, XXI, no. 3–4, 2010, p. 274–305, <http://www.revistacalitateavietii.ro/2010/CV-3-4-2010/04.pdf>
- Sharpe, W. (1992), *Asset allocation: management and performance measurement*, *Journal of Portfolio Management*, Reprinted from the Journal of Portfolio Management, Winter, pp. 7-19.

- Stewart, F. (2007), *Benefit Security Pension Fund Guarantee Schemes*, OECD Working Papers on Insurance and Private Pensions, No. 5, OECD Publishing, doi:10.1787/260604113335
- Tapia, W. (2008), *Description of Private Pension Systems*, OECD Working Papers on Insurance and Private Pensions, No. 22, OECD publishing, © OECD, doi:10.1787/237831300433
- Zalewska, A. (2006), *Is locking domestic funds into the local market beneficial? Evidence from the Polish pension reforms*, Emerging Markets Review, No. 7, Elsevier B.V., doi:10.1016/j.ememar.2006.09.007, pp 339–360
- Law no. 204 from 2006 on facultative pension, The Official Journal of Romania, Ist Part, no. 470 from 31/05/2006
- National Institute of Statistics, Statistical Yearbook, (2009), Life expectancy by sex and area, http://www.insse.ro/cms/files/Anuar%20statistic/02/02%20Populatie_ro.pdf,
- Private Pension System Supervisory Commission (2011), Newsletter, year IV, no. 6/2011, http://www.csspp.ro/uploads/files/110615-buletin-lunar-iunie-2011_diyx.pdf
- Private Pension System Supervisory Commission (2007), Private Pension System in Romania – short overview, <http://w4.csspp.ro/ro/images/pdfdox/prezentare-sistem-pensii-reforma-1.10.2007-1.pdf>
- United Nations, (2010), Department of Economic and Social Affairs, Population Division, World Population Ageing 2009, New York, pag. 70-71, <http://www.un.org/esa/population/publications/WPA2009/WPA2009-report.pdf>

Annex 1:

**Evolution of the net assets of the facultative pensions funds in Romania,
September 2007 - June 2011 (million lei)**



Source: Data processed based on those published on the CSSPP site, <http://www.csspp.ro/evolutie-indicatori/>, statistics section – data series

Annex 2:

Evolution of the facultative pensions funds investments in Romania, pillar III

- % from the total assets -

Period	Bank deposits	Government securities	Municipal Bonds	Corporate Bonds	Supranational Bonds	Shares	Undertakings for Collective Investment in Transferable Securities – UCITS
Year 2007							
September	96.29	-	-	-	-	0.68	-
December	68.18	20.62	-	0.70	-	1.21	7.17
Year 2008							
March	14.72	70.70	-	5.27	-	6.82	1.37
June	16.37	72.78	-	6.24	-	9.57	0.54
September	13.71	56.11	10.55	12.39	-	5.86	1.16
December	12.85	56.92	10.42	14.97	2.87	4.40	0.91
Year 2009							
January	10.23	56.20	11.38	16.45	3.17	4.69	0.90
February	10.85	55.15	10.36	15.85	3.11	3.99	0.74
March	12.94	56.41	10.31	16.73	2.76	4.80	0.90
April	5.74	57.29	9.45	18.01	2.66	5.98	0.94
May	4.42	59.21	8.41	15.92	4.76	5.86	0.89
June	5.45	59.66	7.22	16.10	5.36	6.79	0.82
July	4.16	61.66	6.77	14.68	4.71	8.15	0.82
August	3.61	59.49	5.06	14.28	5.15	11.07	0.82
September	4.91	64.76	4.13	9.49	3.63	13.27	0.81
October	5.27	65.42	3.96	9.68	3.49	12.04	0.56
November	5.48	66.43	3.65	8.44	3.32	12.43	0.54
December	6.09	68.9	3.43	6.89	1.50	12.61	0.54
Year 2010							
January	3.83	69.68	3.28	9.03	1.43	13.83	0.47
February	2.79	69.83	3.01	8.09	1.35	14.18	0.43
March	4.54	66.85	2.80	9.16	1.14	14.58	0.43
April	5.38	67.05	2.71	9.17	1.21	13.79	0.41
May	4.75	68.48	2.65	8.33	1.21	12.3	0.39
June	8.64	66.22	2.55	7.98	1.18	11.4	0.39
July	9.15	66.52	2.45	8.27	1.07	11.9	0.37
August	9.57	67.32	2.33	7.46	1.21	12.2	0.51
September	11.76	66.29	2.66	4.84	2.52	13.88	0.55
October	11.94	63.87	2.14	5.89	3.12	13.7	0.55
November	11.28	63.6	2.12	6.87	3.08	12.92	0.70
December	8.48	65.8	1.65	6.58	2.94	14.10	0.57
Year 2011							
January	7.02	65.14	1.94	6.68	2.81	16.16	0.7
February	4.16	65.17	1.90	6.47	4.0	17.10	0.9
March	5.55	64.89	1.61	6.02	3.56	17.59	0.70
April	4.93	65.36	1.58	5.92	3.83	16.56	1.06
May	4.38	67.51	1.56	7.12	3.77	14.55	1.03
June	6.65	65.52	1.52	6.99	3.68	15.07	1.25

Source: Data processed based on those published on the CSSPP site, <http://www.csspp.ro/evolutie-indicatori/>, statistics section – data series

THE LEASE AGREEMENT – A METHOD TO FINANCE THE PUBLIC SECTOR INVESTMENTS

CRIVEANU Maria

Ph. D., Faculty of Economy and Business Administration/Department Economy Accounting International Business, University of Craiova, Craiova, Romania, criveanu_maria@yahoo.com

Abstract: *In the context of the present world economic crisis, the problem of public organization activity in Romania is strongly influenced by its financing method and implicitly, by the degree achieved in realizing its objectives and mission. It is important to identify the financing methods for different categories of goods and products that represent the object of the organization's activity and especially to discover new methods of public and private financing for the future period. In a logical and rational way, we will select as a financing solution for these assets or products the leasing operations, taking into consideration the sustainability of costs from both the local budget, and from private income, which more than often prove to be insufficient. The need of the local authorities to adopt and conclude a lease agreement was generated and equally influenced by the necessity to make investments for the decentralization of the administrative - territorial activity.*

Key words: finance lease, operating lease, lessor, lessee, lease rate

JEL classification: M 41

1. Introduction

Under these circumstances, the finance lease seems inevitable and the most suitable solution is to conclude a lease contract whose object can be represented not only by technical installations, means of transportation or office automation (as it is the case in the present situation), but also by land properties and buildings (for the future period). According to the international accounting regulations, the lease contract may also be considered as an element of a much wider context of agreements and contracts with private entities concluded in order to build, operate and/or transfer assets and, especially suitable for the longer term assets and infrastructure assets.

What does leasing mean? In the specialized literature, the lease is defined as being a commercial agreement or operation that was concluded between two or more persons and having as purpose the inception or termination of a legal relationship between the two. The operating lease is a commercial agreement in which, one party called lessor shall lend an asset that represents the object of the lease agreement, to the other party, called a lessee of that asset.

In accordance with the explanations given above, the lease agreement represents a convention of transferring the right to use cars, machines, means of transportation and other tangible or intangible assets that belong to the lessor as owner, to another person called lessee/user, for a payment or a series of payments called the leasing rate, for a fixed period of time, under certain conditions and clauses. A lease agreement may include three entities: the lessor (the person that sells the asset and is the producer of that product), the financing entity (the lease company) and the user/lessee (the beneficiary of the financing).

2. Sections

What are the advantages of the lease?

Financing through leasing operations of the investment activity for the entities that are part of the public sector has already become a common practice, because in this way complicated procedures of awarding a bank credit are avoided. It is well known that the credit account presupposes the intangibility of some assets or patrimonial structures belonging to the public or private sector in order to act as guarantee.

On the other hand, among the advantages of the lease that can be mentioned, we include here the following:

- acquisition of high technology goods and products by paying a profitable lease rate that affects only a part of the income obtained and, thus obtaining a positive cash flow;
- the user/lessee has the possibility to redirect the resources, to protect and increase the active capital and therefore increase also the flow of the active assets;

- there is also the possibility to give back the product or goods to the financing entity/lessor at the termination of the lease agreement and to lease another product with superior technical characteristics that is more efficient for the operations;
- the user has the possibility to pay off (if there exist such an option) the leased item/asset and to manage and administer the liquidities more efficiently by establishing a lagging payment schedule for the lease rates, which remain fixed for a period of time according to the payment schedule;
- allowing an optimal and efficient estimation of investments through the long term lease contracts protected from the inflation risks;
- a progressive payment of the value-added tax throughout the entire period of the leasing activity, with the customs taxes being calculated only for the residual value of 20% and paid at the end of the leasing period;
- the lease agreement is based on will and such a situation confers the user the possibility to exercise and express his opinion as far as maintenance, risks, efficiency and use of that asset are concerned;
- it is faster to acquire an optimal asset for the activity and requirements of the client due to the flexibility offered by the lease financing system.

The International Accounting Standards for the lease agreement

According to IPSAS 13 "Leases", the lease is an agreement in which the lessor transfers to the lessee, for a payment or a series of payments, the right to use an asset for a previously established period of time, even if important services done by the lessee may be necessary for the operation or maintenance of the asset.

This standard does not apply in lease agreements to explore for or use natural resources, such as oil, gas, timber, metals and other mineral rights; and for licensing agreements for such items as motion pictures films, video recordings, plays, manuscripts, patents and copyrights. Moreover, this standard should not be applied for the agreements that are services contracts in which the right to use the asset is not transferable from a contracting party to the other, and also in investment property.

The lease operations are classified as finance lease and operating lease, depending on whether the risks (certain losses from idle capacity, technological obsolescence or changes in value due to changing economic conditions) or the advantages or rewards (service potential, profitable activities and gain from appreciation in value or realization of a residual value) over the ownership title of that leased asset is conferred to the lessee or to the lessor. The finance lease is the lease operation in which all the risks and the rewards incident to ownership are transferred, whereas in the case of the operating lease, this does not transfer all the risks and rewards incident to ownership.

The leases of land and buildings are classified as operating or finance leases in the same way as leases of other assets. However, we should mention that a characteristic of land is that it normally has an indefinite economic life and, if title is not expected to pass to the lessee by the end of the lease term, the lessee does not normally receive substantially all of the risks and rewards incident to ownership.

In the case of the finance lease, the lessee has the option to purchase the asset at the end of the lease term at a price which is expected to be sufficiently lower than the fair value.

Recognition of Leases in the financial statements

In a lease agreement, the lessees shall recognize in the financial statements the assets acquired under finance leases as assets and the associated lease obligations as liabilities.

The International Public Sector Accounting Standard IPSAS 13 "Lease agreements" recommend to the lessees that the assets and liabilities should be recognized at amounts equal at the inception of the lease to the fair value of the leased property or at the present value of the minimum lease payments, in case the latter is lower. The lease payments should be divided in the finance charge and the reduction of the outstanding liability. The finance charges should be allocated to periods during the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period.

The depreciation policy should be consistent with that for depreciable assets which are owned by the institution according to the International Public Sector Accounting Standard (IPSAS) 17, "Intangible assets" and if there is no reasonable certainty that the lessee will obtain ownership by the end of the lease term, the asset should be fully depreciated over the shorter of the lease term or its useful life.

The same standard recommends the lessors to recognize the lease operations as assets in their financial statements of financial position, and present such assets as a receivable at an amount equal to the net investment in the lease.

Under an operating lease agreement, the lease payment receivable shall be recognized by the lessors as expenses in the financial situation in a straight-line basis throughout the term of the agreement, excluding costs for the services (such as insurance and maintenance) which will be recognized as expense in the period in which they are incurred, and the lessors shall present the assets owned in the financial position in accordance with their nature. The revenue resulted from the operating lease, excluding the revenues from the provision of service and maintenance, shall be recognized as financial revenue on a straight line basis and the costs, including reimbursement incurred for the revenue are recognized as costs or expenses.

In order to better understand the operations of the finance lease, we will present in the next section some accounting practices specific for this type of contracts.

Therefore, we take into consideration a public institution, financed from the local budget which acquires, on the basis of a lease agreement, a means of transportation whose value is 14.000 EUR (the exchange rate is 4,351 lei/EUR). The inception date of the lease agreement is 01.06.N, the term of the agreement is 3 years, the monthly payable rates are 273,5 EUR (VAT excluded) and 339,2 EUR (VAT included); the annual interest rate is 6,06%. The immediate advance payment is 4.900,00 EUR (35%), the residual value is 140 EUR(1%), and the administration commission is 280 EUR(2%) and should be paid in full amount at the beginning of the agreement at the same time with the advance payment. The fixed asset should be depreciated in a straight-line basis.

Lease payments:

Table 1:

Specification	Principal	Interest	Commission	TOTAL excl VAT	TVA	TOTAL incl VAT
I. ADVANCE PAYMENT	4900,0	-	280,0	5180,0	1243,2	6423,2
Payment of lease rate 1	227,6	46,0	-	273,6	65,6	339,2
Rate 2	228,9	44,7		273,6	65,6	339,2
.						
.						
.						
.						
II. TOTAL AMOUNT OF LEASE RATES	8.960,0	887,1		9847,1	2363,3	12.210,4
III. RESIDUAL VALUE	140,0	-	-	140,0	33,6	173,6
CONTRACT VALUE (I+II+III)	14.000,0	887,1	280,0	15.167,1	3640,1	18.807,2

A. Operations in the financial activity of the lessee (user)

1. The advance payment in amount of 4,900 EUR and the administration commission in value of 280 EUR at an exchange rate of 4,351 lei/EUR. The payment is incurred from budgetary credits.

a). Advance payment (TVA = 4.900 EUR x 24% = 1.176 EUR; 4.900 + 1.176= 6.076 EUR);
6.076 EUR x 4,351 lei/EUR = 26.436,6 lei

404 "Fixed assets providers" = 7702 "Finance from local budget" 26.436,6

b). Registering the invoice of the advance payment in a lease agreement:

%	=	404 "Fixed assets providers"	<u>26.436,6</u>
232 "Advance payment for fixed tangible assets"			21.319,9
4426 "Deductible VAT"			5.116,7

2. On the basis of the lease agreement, the motor vehicle is received and confirmed according to the invoice no. ...

a) Reception of the asset:

2133	“Means of transportation”	=	167	“Other assimilated loans and debts”	6091,4
------	---------------------------	---	-----	-------------------------------------	--------

b) Regularization of the advance payment:

167	“Other assimilated loans and debts”	=	232	“Advance payment for fixed tangible assets”	21.319,9
-----	-------------------------------------	---	-----	---	----------

c) Payment of the administration commission: $280 \text{ EUR} + (280 \times 24\%)$; $280 + 67,2 = 347,2 \text{ EUR}$;
 $347,2 \text{ EUR} \times 4,351 \text{ lei/EUR} = 1.510,7 \text{ lei}$

627	“Expenses for bank services and assimilated”	=	7702	“Local budget finance”	1510,7
-----	--	---	------	------------------------	--------

3. The invoice for the first lease rate in total amount of 339,2 EUR (VAT included) is registered, of which: rate = 227,6 EUR; interest = 46,0 EUR, TVA = 65,6 EUR). The exchange rate is 4,401 lei/EUR.

	%	=	404	“Fixed assets providers”	1492,82
167	“Other assimilated loans and debts”				990,29
1687	“Interests for other assimilated loans and debts”				200,14
4426	“Deductible VAT”				285,42
665	“Expenses for exchange rate differences”				16,97

And at the same time:

666	“Expenses for interests”	=	1687	“Other debts associated to assimilated loans”	200,14
-----	--------------------------	---	------	---	--------

4. The invoice is paid:

404	“Fixed assets providers”	=	7702	“Local budget finance”	1492,82
-----	--------------------------	---	------	------------------------	---------

Note: The other rates are registered in the accounting system similarly.

5. The insurance premium shall be paid on the agreed conditions, in amount of 300 lei:

613	“Insurance premium expenses”	=	7702	“Local budget finance”	300
-----	------------------------------	---	------	------------------------	-----

6. The depreciation of the means of transportation is registered taking into consideration that its useful life is 5 years ($60.914 \text{ lei}/5 \text{ years} = 12.182,8 \text{ lei/year}$ and the monthly depreciation = $12.182,8 \text{ lei}/12 \text{ months} = 1015,2 \text{ lei/month}$)

6811	“Operational costs for depreciation of fixed assets”	=	2813	“Depreciation of transport means”	1015,2
------	--	---	------	-----------------------------------	--------

7. At the termination of the lease agreement, the residual value of 140 EUR shall be paid at an exchange rate of 4,351 lei/EUR

	%	=	404 "Fixed assets providers"	755,33
167 "Other assimilated loans and debts"				609,14
4426 "Deductible VAT"				146,19
404 "Fixed assets providers"		=	%	<u>755,33</u>
			7702 "Local budget finance"	748,39
			765 "Income from exchange rate differences"	6,94

B. Operations in the accounting system of the lessor

1. The advance payment shall be registered according to the lease agreement:

560 "Disposal of public institutions wholly financed from own revenues"	=	4111 "Clients"	26.436,6
---	---	----------------	----------

And at the same time:

4111 "Clients"	=	%	<u>26.436,6</u>
		419 "Creditor clients"	21.319,9
		4427 "Collected VAT"	5.116,7

2. The transfer of the asset in register, on the basis of the finance lease agreement (asset value = 14.000 EUR; interest = 887.1 EUR)

267 "Long term receivables"	=	%	<u>64.773,7</u>
		2133 "Means of transport"	60.914,0
		472 "Advance income"	3.859,7

3. The first payment (advanced payment) is regularized and reimbursed:

419 "Creditor-clients"	=	267 "Long term receivables"	21.319,9
------------------------	---	-----------------------------	----------

4. Charging the administration commission:

560 "Disposal of public institutions wholly financed from own revenues"	=	719 "Other operational revenues"	1510,7
---	---	----------------------------------	--------

5. The first rate payment shall be invoiced and registered:

4111 "Clients"	=	%	<u>1492,82</u>
		267 "Long term receivables"	1190,43
		4427 "Collected VAT"	285,42
		765 "Income from exchange rate differences"	16,97

560	“Disposal of public institutions wholly financed from own revenues”	=	4111 “Clients”	1492,82
-----	---	---	----------------	---------

The interest is regularized:

472	“Advanced payment income”	=	766 “Revenues from interests”	200,14
-----	---------------------------	---	-------------------------------	--------

7. At the termination of the lease agreement, it should be mentioned if the option of the lessee is to buy that asset and respectively the option of the lessor to sell the asset at the residual value of 140 EUR, TVA = 33,6 EURO (the exchange rate is 4,351 lei/EUR)

4111 “Clients”	=	%	<u>755,33</u>	
		267 “Long term receivables”	609,14	
		4427 “Collected VAT”	146,19	
560	“Disposal of public institutions wholly financed from own revenues”	=	4111 “Clients”	755,33

Note: In the event the lease agreement, regardless of its nature, is expressed in a foreign currency (internal lease in foreign currency or external lease) there is the problem of registering the exchange rate differences so as these were derived from the practical application presented above.

3. Conclusions

In accordance with the IPSAS 13, the classification of a lease agreement as a finance lease agreement has to be settled at the inception of the agreement and shall remain unchanged throughout the entire term, based on the following elements and situations:

Transfer of the ownership title of the asset from the lessor at the termination of the lease agreement;

- The useful life of the asset is covered throughout the entire term of the agreement;
- The Lessee may express the option to buy the asset at the most suitable price;
- The Lessee may terminate the lease agreement (in this case the losses of the lessor are attributed to the lessee) though having the capacity to continue the lease agreement at a lease rate lower than the fair value of the market;
- The present value of the minimum lease payments is equal to the real value of the leased asset;
- The leased asset cannot be easily replaced with another asset;
- The assets are of a special nature, so that the lessee can use them without any major modification or alteration.

The operating leasing is the lease operation which does not include elements and aspects specific to the finance leasing.

4. References

- Băcanu, B. (2008) *Organizația publică, Teorie și Management*. Iași: Polirom.
- Criveanu, M. (2011) *Contabilitate publică conformă cu practica internațională*. Craiova: Universitaria
- Dascălu, C. and al. (2006) *Convergența contabilității publice în România la Standardele Internaționale de Contabilitate pentru Sectorul Public*. București: CECCAR
- Henry, N. (2005) *Public Administration and Public Affairs*. Upper Saddle River: Prentice Hall
- IPSASB (2005) *Standardele Internaționale de Contabilitate pentru Sectorul Public*. București: CECCAR
- Roman, C. (2004) *Gestiunea financiară a instituțiilor publice*. București: Economica

STUDY ON LIQUIDITY IN ROMANIAN COMPANIES

CSEGED I Sandor

Ph. D. Professor, Faculty of Economics and Business Administration, Babeş-Bolyai University, Cluj-Napoca, Romania, exkontalex@yahoo.com

BĂTRÂNCEA Ioan

Ph. D. Professor, Faculty of Economics and Business Administration, Babeş-Bolyai University, Cluj-Napoca, Romania, i_batrancea@yahoo.com

TODEA Angela

Faculty of Psychology, Babeş-Bolyai University, Cluj-Napoca, Romania, maris_angela2004@yahoo.com

Abstract: *In this paper the authors present the results of a study on liquidity in Romanian companies. Research was conducted on 900 businesses and concerned trade, services and productive activity. Also the research undertaken were identified intervals of liquidity, financial security all sectors of the economy, supported by funding banks.*

Key words: liquidity, quick ratio, liabilities, assets

JEL classification: G 32

1. Introduction

The study aims at assessing the liquidity of an enterprise capacity to meet its short-term debt by continuing and progressive transformation of its assets in cash assets.

Liquidity refers to the availability of company resources to meet short-term cash requirements. A company's short-term liquidity risk is affected by the timing of cash inflows and outflows along with its prospects for future performance.

A company's **short-term liquidity** refers to its ability to meet short-term obligations. *Liquidity* is the ability to convert assets into cash or to obtain cash. *Short term* is conventionally viewed as a period up to one year, though it is identified with the normal operating cycle of a company (the time period encompassing the buying-producing-selling-collecting cycle).

The importance of short-term liquidity is best seen by considering repercussions stemming from a company's inability to meet short-term obligations. Liquidity is a matter of degree. Lack of liquidity can signify a company unable to take advantage of favorable discounts or profitable opportunities. It also implies limited opportunities and constraints on management actions. More extreme liquidity problems reflect a company's inability to cover current obligations. This can lead to forced of investments and assets and, in its most severe form, to insolvency and bankruptcy.

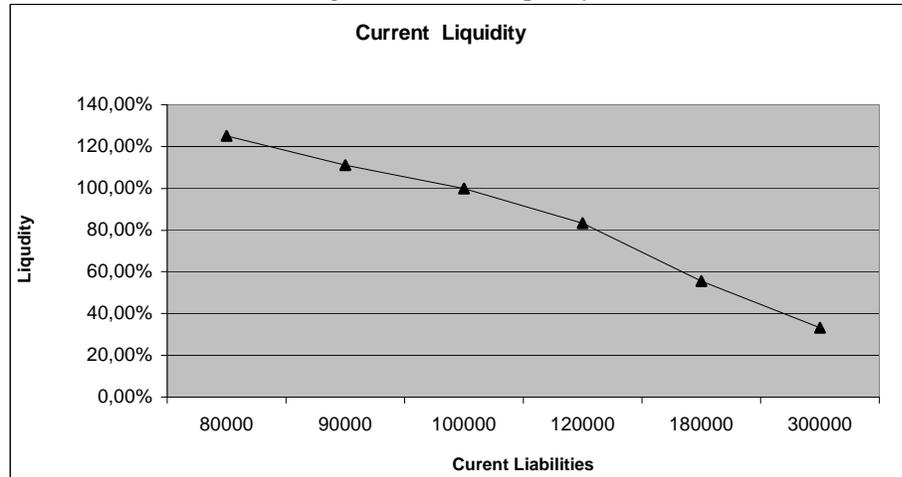
2. Literature review

The literature liquidity is a favorite subject of all analysts and financiers in the country and abroad.

Thus, many American professors argue that liquidity is dependent on operating cycle of a firm. (Gerald I.White, 1998) The firm purchases or manufactures inventory, requiring an outlay of cash and/or the creation of trade payables debt. The sale of inventory generates receivables that, when collected, are used to satisfy the payables, and cycle is begun again. The ability to repeat this cycle on a continuous basis depends on the firm's short-term liquidity and cash-generating ability.

According with other specialist the relationship of current assets to current liabilities is an important indicator of the degree to which a firm is liquid. Working capital and the components of working capital also provide measures of the liquidity of a firm. Ratios that directly measures a firm's liquidity provide clues about whether a firm can pay its maturing obligations. (Woefel C., 1994)

Figure 1: Current liquidity



From Hennie van Greuning point of view, liquidity represents an indication of the entity's ability to repay its short-term liabilities, measured by evaluating components of current assets and current liabilities. (Hennie van Greuning, 2005)

Other American author consider that one way to test the degree of protection afforded lenders focuses on the short-term credit extended to a business for funding its operations. It involves the liquid assets of a business, that is, those current assets that can readily be converted into cash, on the assumption that they would form a ready cushion against default. (Erich A. Helfert, 1997)

The International Accounting Standards highlight the fact that liquidity refers mainly to cash reserves available in the immediate future, after considering the financial obligations of the period.

3. Method and results

Conceptually, the ratios differ in whether levels (amounts shown on the balance sheet) or flows (cash inflows and outflows) are to gauge the relationship. (Gerald I. White, 1998) Two ratios compare levels of cash resources with current liabilities as the measure of cash obligations: current ratio and quick ratio (acid-test ratio). A common relative measure in practice is the current ratio. The **current ratio** is defined as:

$$\text{Current ratio} = \frac{\text{Current asset}}{\text{Current liabilities}} \quad (1)$$

A frequently heard rule of thumb is if the current ratio is 2:1 or better, then a company is financially sound, while a ratio below 2:1 suggests increasing liquidity risks. At one time this "norm" was 2.5:1. A current ratio much higher than 2:1, while implying superior coverage of current liabilities, can signal inefficient use of resources and a coverage of current liabilities, can signal inefficient use of resources and a reduced rate of return.

If we are dealing with a trade or with a short production cycle, so with a high rotational speed, there will be no difference between the current and immediate liquidity

(Din cercetarea întreprinsă pe un eșantion de 900 de întreprinderi a rezultat următoarea evoluție a lichidității curente.)

From research conducted on a sample of 900 businesses showed the following increases in liquidity.

A stringent test of liquidity uses the **acid-test (quick) ratio**. This ratio includes those assets most quickly convertible to cash and is computed as:

$$\text{Quick ratio} = \frac{\text{Cash} + \text{Cash equivalents} + \text{Marketable securities} + \text{Accounts receivable}}{\text{Current liabilities}} \quad (2)$$

Inventories are often the least liquid of current assets and are removed from the acid-test ratio. Another reason for excluding inventories is their valuation typically involves more managerial discretion

than required for other current assets. Yet we must remember certain inventories are more liquid than slow-paying receivables. The acid-test ratio is a more stringent test of liquidity, and our analysis must assess the merits of excluding inventories in evaluating liquidity.

The use of either current or quick ratio implicitly assumes that the current assets will be converted to cash. (Gerald I. White, 1998)

The difference between the current and immediate liquidity is how to deal with the stocks. Therefore, this indicator must necessarily be correlated with the speed of current assets.

From research conducted on the models we identified intervals bank liquidity safety by sector as shown in Annex 1. Comparative analysis by industry liquidity is another dimension of research undertaken. To make a comparison, we randomly selected a total of nine hundred Romanian enterprises, which are representative of three branches: Trade, Transportation and Manufacturing.

For each branch we chose three hundred companies in the banking sense, are considered companies with good liquidity (A), three hundred companies with an acceptable liquidity (B) and three hundred have reduced liquidity (C).

Also just to capture the reality of the economy as we presented in two forms of liquidity development. The times are not necessarily the same as the date for the nine hundred companies because we considered it important trend that follows their development over time within the same industries in the table below.

Table 1: Liquidity Analysis

Sector	Trade			Transportation			Production		
	A %	B %	C %	A %	B %	C %	A %	B %	C %
First Period									
Current Liquidity	77,0	66,0	24,8	63,0	62,5	18,9	211,2	74,7	97,7
Quick ratio	57,0	37,0	14,2	56,4	48,0	18,0	139,0	47,0	55,8
Second Period									
Current Liquidity	103,0	65,7	44,4	109,8	50,0	44,0	125,7	98,1	33,5
Quick ratio	74,5	37,0	5,9	48,4	38,0	43,5	71,9	68,0	5,9
Third Period									
Current Liquidity	104,2	64,8	43,0	118,3	100,5	70,0	171,2	99,0	41,4
Quick ratio	73,5	33,0	13,0	36,0	83,0	69,0	100,1	73,0	2,5

Sources: Own calculus

Conclusions drawn from research undertaken are presented below.

a) *Trade*. Based on information presented in Appendix 1 on the intervals of liquidity supported by donors, industry trade, we can say that the situation presented one hundred companies in category "A" have a liquidity of over 100%, and considering that evolution is upward. We believe that, although apparently we are dealing with firms that do not have problems in the short term payment obligations, it is not necessarily the best situation economically. The high level of liquidity may mean the following:

- companies have very low debt, which can be reflected in reduced investment;
- freight companies are basically small, which means that does not use trade credit. This impairs the turnover of the company;
- Also, firms may have the speed of very high stocks, which induces a positive effect on short-term cash.

These companies have reserves in terms of liquidity, to increase investment activity, but also increase by increasing inventory turnover, provided that there is a creditworthy markets.

Regarding businesses in category "B", which is above the rate of 60% acceptable rating presented in Annex 1 for branch "trade", however there are certain aspects that make us suggest taking measures to improve liquidity. Thus, the trend indicator "current liquidity" is approximately constant and, moreover, is quite low in terms of percentage, which shows a consistent policy regarding societăților în expansion and development firms. We believe that this may be due to one of the following:

- an incorrect supply policy, the share of unsold goods in the total stock of goods is relatively high;
- hiring short-term debt unweighted volume of activity (commercial credit);
- stock turnover to low potential

We believe that companies can improve their practice changing indicator of the supply and sale, that changing the debt structure (increasing share of medium-term debt in total debt). Companies in the

group "C" are considered dangerously low liquidity, even unacceptable for any financier. We believe that this may be due to following reasons:

- volume of current assets is very low, being caused by the existence of a stock of goods enough;
- large short-term debt, which, if present, may be due to end leases for the transport required for distribution, while the companies do not have much selling;

Solutions to redress this situation consists in the renunciation of lease obligations by transmitting to another company, attracting longer term trade credit for the growth of current assets and, not least, the cash capital increase.

b) Transportation

From the situation described in the table above that no society has a very good liquidity. It was considered that companies in the group "A" is as good as corporate development indicator is upward, even if it is below the level considered "very good" (120%) for this branch, in which the sponsor expects a permanent liquidity over 100%, because there are large stocks used and the more recoverable stocks. Liquidity problems may be caused primarily by the existence of short-term debt with a large volume. The short-term debt in the industry may be caused by:

- existence of leases for property or assets;
- leases;
- resorting to subcontractors for the performance of services;
- hiring overweight short-term loans.

Companies in the group "C" shows the worst situation in this sector, although the trend is positive, the increase is insufficient. As transport companies that have committed to purchase vehicles in leasing without an outlet, especially suitable solvent. It is proposed that these companies to sell the obsolete fixed assets to turn them into cash to help improve the analyzed indicator.

c) Production

It is a sector or an industry that has particular importance in creating added value and, as such, the national economy. Liquidity problem in the industry is more sensitive and, as such, requires appropriate management. Rotational current assets turnover ratio is significantly lower than in other branches, which means that you must carefully managed following:

- Raw materials stocks;
- stocks of finished products;
- investment policy;
- hiring short-term loans;
- commercial loans;
- equity problem.

From the table above, shows that companies in the group "A" are doing very good, even if the indicator is oscillating trend, falling more during the second to rise again recently. Index fluctuations may be due to the following factors:

- irregular supply of raw materials;
- fluctuations in sales;
- fluctuations in short-term credits (discounts).

Fluctuations can be avoided by adjusting the supply of raw materials based on sales, that through proper marketing. It would be appropriate to give credit to cover the differences recorded between the time of payment of suppliers and customers during collection.

Companies in the group "B" are considered to have an average liquidity. At the opposite end of the group companies are "C", which essentially is "noticed" by involution of the indicator involution which was caused by the use of resources for current needs with inefficient investment destination. These companies are considered uncredited in terms of liquidity. Measures can be taken to improve liquidity are:

- sale of those assets that were acquired on the current account financing needs;
- share capital increase by cash;
- increase in sales volume;
- maintaining an optimal stock of raw materials and finished products.

4. Conclusions

Following investigations carried out to identify the following conclusions:

- Enterprises in trade and transport services have a high liquidity firms in the manufacturing sector;
- Investment in leasing activity has a negative impact on liquidity,
- The manufacturing sector need to focus on stocks of raw materials and finished products, while trade is necessary to focus on stocks of goods required by customers.
- Liquidity analysis must be supplemented by analysis acrivelor rorației current, current debt and cash flow.

5. References

- Hennie van Greuning, (2005) *International financial reporting Standards. A practical guide*. The World Bank, USA, p.27.
- Helfert, Erich A.(1997) *Techniques of Financial Analysis*. McGraw-Hill, USA, p.98.
- White, Gerald I. (1998) *Ashwinpaul C. Sondhi, Dov Fried, The Analysis and Use of Financial Statements*. Wiley and Sons Inc., Canada, p.155-160
- Woefel, Charles J. (1994) *Financial Statement Analysis*, Mc Graw-Hill, USA, p.67-68

Annex 1:

Sectors	High Liquidity	Good Liquidity	Acceptable liquidity	Low liquidity	Inadequate liquidity
Trade	Lc>=100%	100%>Lc>=90%	90%>Lc>=80%	80%>Lc>=60%	Lc<60%
Chemical	Lc>=105%	105%>Lc>=100%	100%>Lc>=80%	80%>Lc>=60%	Lc<60%
Mining and quarrying	Lc>=105%	105%>Lc>=100%	100%>Lc>=80%	80%>Lc>=60%	Lc<60%
Computing equipment industry, Electrical	Lc>=120%	120%>Lc>=100%	100%>Lc>=80%	80%>Lc>=60%	Lc<60%
Transport industry	Lc>=120%	120%>Lc>=100%	100%>Lc>=80%	80%>Lc>=70%	Lc<70%
Textile and leather	Lc>=110%	110%>Lc>=80%	80%>Lc>=60%	60%>Lc>=50%	Lc<50%
Agriculture	Lc>=105%	105%>Lc>=100%	100%>Lc>=70%	70%>Lc>=50%	Lc<50%
Construction And Other Branches	Lc>=105%	105%>Lc>=100%	100%>Lc>=70%	70%>Lc>=50%	Lc<50%
Metallurgy	Lc>=110%	110%>Lc>=100%	100%>Lc>=80%	80%>Lc>=60%	Lc<60%
Wood industry	Lc>=110%	110%>Lc>=100%	100%>Lc>=80%	80%>Lc>=60%	Lc<60%
Leasing	Lc>=50%	50%>Lc>=20%	20%>Lc>=12%	12%>Lc>=5%	Lc<5%

A STATISTICAL STUDY ON THE IT ROMANIAN COMPANIES PERFORMANCE

CSEGEDI Sandor

Ph. D. Professor, Faculty of Economics and Business Administration, Babeş-Bolyai University, Cluj-Napoca, Romania, exkontalex@yahoo.com

BĂTRÂNCEA Larissa-Margareta

Ph. D. Assistant professor, Faculty of Business, Babeş-Bolyai University, Cluj-Napoca, Romania, larissabatrancea1707@yahoo.com

MOSCVICIOV Andrei

Ph. D. Assistant professor, Faculty of Business, Babeş-Bolyai University, Cluj-Napoca, Romania, andreim@anvico.ro

Abstract: *In the paper the authors show the modalities of performance measurement in IT Romanian companies. Thus, the authors find out the relationships between ROE and ROA on the one hand and leverage and liquidity on the other hand. Also is presented some important values for these ratios as median value taking into account the gap of leverage.*

Key words: return, assets, equity, leverage, structure

JEL classification: D 22

1. Introduction

The performance of an enterprise depends largely on its financial structure that is how much of its activity is financed by equity and how much by debt. According to classical theory there is a balance between the two funding sources, report that leads to minimize company cost of the company's capital and thus maximize the company's value. Thus, I've considered it interesting to see if in the companies in Romania there is a significant link between their performance measured by ROE and ROA and leverage (as a measure of company's exposure and hence as indirect measure of the company's financial structure) and their liquidity.

2. Method and Results

Panel Data Models

These models allow:

- Summarizing through a single coefficient of a variable impact on a group of time dependent variables series (group of companies, countries, etc.);
- estimating the specific coefficients (constant or coefficients of independent variables) for each time series considered as a dependent variable - fixed effects;
- Grouping the dependent variables in categories and estimating the category's impact (that the dependent variable is part of) on its evolution.

Brooks (2008) mentions several advantages of these models:

- solves more problems compared to time series analysis or cross-sectional series;
- allow the assessment of variables behavior or their relationship over time;
- minimize the omitted variables problems that arise in the case of time series or cross-sectional (more informative data, more variability, more degrees of freedom, less co-linearity between variables, more effectiveness);
- “control” individual heterogeneity;
- Are capable to capture the adjustments' dynamics.

From an econometric point of view, a panel can be written in the following form:

$$y_{it} = a + bx_{it} + \varepsilon_{it}$$

where:

y_{it} Is a dependent variable;

a is a constant;

b is the size vector $k \times 1$ of the coefficients to be estimated;

x_{it} is the size vector $1 \times k$ of the observations of the explanatory variables;
 $t = 1, \dots, T$; $i = 1, \dots, N$.

In this equation, the term ε_{it} is very important because, depending on his behavior, panel data models are divided into:

- *Models with fixed effects*, when ε_{it} it is assumed that vary non-stochastic for $t = 1, \dots, T$ and/or for $i = 1, \dots, N$. These models are analogous to the one-dimensional models with dummy variable and are used when there are unique and time constants attributes of the analyzed variables that are not the result of a random variation;
- *Models with random effects*, when ε_{it} it is assumed that vary non-stochastic for $t = 1, \dots, T$ and/or for $i = 1, \dots, N$. These are used when there are unique attributes, time constants of the analyzed variables that are the result of a random variation and are not correlated with variables regresses. The model is suitable if one wants to extract some conclusions about the entire population and not just for the examined sample.

In the analysis were taken into account the 778 companies during the 5 years, building the panel econometric models for each sub-domain of the form:

$$ROA_{i,t} = a_1GI_{i,t} + a_2LC_{i,t} + \varepsilon_{i,t}, i = \overline{1,773} \quad \text{și } t = \overline{1,5}$$

$$ROE_{i,t} = a_1GI_{i,t} + a_2LC_{i,t} + \varepsilon_{i,t}, i = \overline{1,773} \quad \text{și } t = \overline{1,5}$$

where:

$ROA_{i,t}$ - represents the value of the ROA indicator recorded by company i in year t ;

$ROE_{i,t}$ - represents the value of the ROE indicator recorded by company i in year t ;

$GI_{i,t}$ - represents the value of the GI (indebtedness) indicator recorded by company i in year t ;

$LC_{i,t}$ - represents the value of the LI (immediate liquidity) recorded by company i in year t ;

From Table 1 we can see that ROA is significantly influenced by the evolution of current liquidity. In the software specialization a 1% change in indebtedness will lead to a change in ROA of 0.0704% and a 1% change in current liquidity will lead to a change in ROA of 0.0030%. In the case of ROE, current liquidity is not an influencing factor in any of the four sub-domains, and the influences ROE of companies that specialize only in software and trade. Thus, for software, a 1% change in indebtedness will lead to a change of 3.2305% of ROE. It is noted that both performance indicators are influenced negatively by indebtedness, regardless of the sub-domain.

Table 1: Empirical results on the study of the relationship between ROA, leverage and current liquidity

$ROA_{i,t} = a_1GI_{i,t} + a_2LC_{i,t} + \varepsilon_{i,t}$		$ROE_{i,t} = a_1GI_{i,t} + a_2LC_{i,t} + \varepsilon_{i,t}$	
Coefficients	Point Estimate	Coefficients	Point Estimate
<i>Software</i>			
a_1	0.0704***	a_1	3.2305*
a_2	0.0030***	a_2	0.0060
<i>Consultancy</i>			
a_1	0.0030***	a_1	0.0833
a_2	0.0007***	a_2	0.0022
<i>Trade</i>			
a_1	0.1371***	a_1	3.0832**
a_2	0.0055***	a_2	0.0062
<i>Others</i>			
a_1	0.0288***	a_1	3.3742
a_2	0.0190***	a_2	0.0468

Note: *Significant with a risk threshold of 10%; ** Significant with a risk threshold of 5%; *** Significant with a risk threshold of 1%

Source: Personal Processing

Table 2: Distribution of indebtedness in 2009

	GI Variation Range			Total cases
	[0 – 30%)	[30% – 60%)	≥ 60%	
Software				
No. cases	10 (20.41%)	14 (28.57%)	25 (51.02%)	49 (100%)
Median ROE	33.53%	65.91%	0	
Median ROA	31.67%	36.31%	1.81%	
Consultancy				
No. cases	133 (20.62%)	129 (20.00%)	383 (59.38%)	645 (100%)
Median ROE	56.11%	43.88%	2.40%	
Median ROA	47.12%	23.43%	2.66%	
Trade				
No. cases	3 (27.27%)	2 (18.18%)	6 (54.55%)	11 (100%)
Median ROE	21.41%	89.35%	17.55%	
Median ROA	21.19%	42.35%	3.02%	
Others				
No. cases	20 (30.30%)	16 (24.24%)	30 (45.46%)	66 (100%)
Median ROE	53.89%	56.90%	0	
Median ROA	48.23%	32.86%	0	

Source: Personal Processing

The analysis undertaken revealed the distribution of the median value for ROA and ROE, on the four areas based on “three areas” called: green area (0-30%), brown area (30% -60) and red area (over 60%). Thus:

- For software
 - Median ROE for the green area has a value of 33.53%, for the brown area the recorded value is 65.91%, and for the red area the value of the indicator is 0%.
 - Median ROA for the green area has a value of 31.67%, for the brown area the recorded value is 36.31%, and for the red area the value of the indicator is 1.81%.
- For consultancy
 - Median ROE for the green area has a value of 56.11%, for the brown area the recorded value is 43.88%, and for the red area the value of the indicator is 2.40%.
 - Median ROA for the green area has a value of 47.12%, for the brown area the recorded value is 23.43%, and for the red area the value of the indicator is 2.66%.
- For trade
 - Median ROE for the green area has a value of 21.41%, for the brown area the recorded value is 89.35%, and for the red area the value of the indicator is 17.55%.
 - Median ROA for the green area has a value of 21.19%, for the brown area the recorded value is 42.35%, and for the red area the value of the indicator is 3.02%.
- For other activities
 - Median ROE for the green area has a value of 53.89%, for the brown area the recorded value is 56.90%, and for the red area the value of the indicator is 0%.
 - Median ROA for the green area has a value of 48.23%, for the brown area the recorded value is 32.86%, and for the red area the value of the indicator is 0%.

3. Conclusions

From the analysis of key statistical indicators of the central tendency and the variation of assets return rate and return rate we can see that over 50% of companies engaged in consulting activities lie in the green zone not having problems with continuing financial difficulties.

4. References

- Brown, L.D., Pinello, A.S. (2007) *To What Extent Does the Financial Reporting Process Curb Earnings Surprise Games?*, Journal of Accounting Research, 00218456, Dec 2007, Vol. 45, Issue 5

- Crane, M., Dyson, R.A. (2009) *Risks in Applying the New Business Combination Guidance to Intangible Assets*, CPA Journal, 07328435, Jan 2009, Vol. 79, Issue 1
- Davis, M., Largay III, J. A. (2008) *Consolidated Financial Statements*, CPA Journal, 07328435, Feb 2008, Vol. 78, Issue 2
- Figlewicz, R.E., Zeller, T.L. (1991) *An analysis of performance, liquidity, coverage and capital ratios from the statement of cash flow*, ABER, Vol. 22 No.1.
- Kuritzkes, A., Schuermann, T. (2007) *What We Know, Don't Know and Can't Know about Bank Risk: A View from the Trenches*, Princeton University Press.
- Palepu, K.G., Healy, P.M., Bernard, V.L. (2008) *Business Analysis and Valuation. Using Financial Statements*, 2nd ed., Thompson Learning, City, OH.
- Thomson, J.C. (2008) *When Accounting Finally Becomes Global*, CPA Journal, 07328435, Sep 2008, Vol. 78, Issue 9.

ABSENTEEISM AND THE IMPACT OF COST IN HOSPITALS

DĂUȘ Gabriela Loredana

Ph. D. Student, Valahia University of Târgoviște, Târgoviște, România, loreadanadaus@yahoo.com

Abstract: *Absenteeism has a significant impact on entities, being both profoundly negative and a measure of the ability of institutions to offer high quality products and services respecting the deadlines and budgets. As a chronic phenomenon, it affects the morale of team work, through the additional work that the latter must make to compensate for their colleagues and affects the quality of goods or provided services. Absent employees create an unfair overload to those who are present, because this constant miss disturbs the long-term environment; generates additional costs, delays and risks, in general reduces the productivity and efficiency of the organization.*

Key words: absenteeism, hospital, hidden costs, healthy system

JEL classification: I 15

1. Introduction

Seen as a set of elements in interaction, the organization is a „social entity structured and completed, made from subsystems which interact and continuously adapt both to internal changes (self-regulating systems) and external pressures (open systems) to reach the assumed objectives” (Gavrilă & Lefter, 2007, p. 30-31). On the other hand, despite its form, „the organization can be defined as a system usually composed of several people working together under known rules to achieve a goal” (Niculescu & Verboncu, 2008, p. 94).

The organization evolves into a world more and more constrained by norms: activity, production, commercial changes, accounting and financial norms, social norms related to working conditions or quality, environment and security norms. In this context, the social responsibility of the organization tends to increase under the pressure of different categories of actors and networks (political, union-related, religious, etc.).

Ensuring the effective functionality of the organization is a task which requires knowledge by the managers of the organization of the endogenous and exogenous factors which impacted the day-to-day activities.

As a complex system, the organization is a combination of five types of structures: physical, technological, organizational, demographic and mental interconnected with human behaviors (individuals, activity groups, peer-pressure group, collectivities, etc.) (Savall & Zardet, 2010).

The essence of each organization is given by the human effort, and its performance and competitiveness are influenced largely by the human behavior within the organization. Human resources have the main characteristic of creating value and thus they become the fundamental element of the increase in productivity. From this perspective, Chris Argyris, one of the major theorists in regard to organizations, underlined in 1960 the idea that „organizations are complex human strategies, made to realise certain objectives” (Cole, 2000, p. 40).

So, human resource, by its characteristics, decisions, actions and operational behaviors, is a determinant of functionality, efficacy, efficiency and competitiveness within an organization. In the new knowledge society, the human capital has replaced the financial capital as a strategical resource, despite the traditional approach regarding the workforce, in which people are considered mere costs or the accounting approach in which people are treated as simply an element of human resources costs (Milkovich & Boudreau, 1991).

2. The hospital - key organization of the healthy system

The healthcare system consists of all organizations, institutions and resources involved in healthcare, providing formal care (doctors, clinics, hospitals and pharmacies), informal care (traditional healers, community workers) and other services, such as research. In addition, a healthcare system includes policies and regulations, and also services that are not directly related to health care, but which help promote or protect health.

Currently, the concept of hospital gathers new meanings, through the evolution of society in terms of knowledge and the incidence of technical progress in all spheres of economic and social life.

From the charity institutions of the Middle Ages, the charitable establishments of the Renaissance, nowadays, hospitals are clinics, in the entire meaning of the word, as well as a strategic factor of therapeutics and medical education, because of the intensification of scientific medical research.

Worldwide, hospitals focus the majority of their resources, skills and health equipment, aiming to support patients and contribute to their health status improvement, and thus help mitigate risks for all citizens, regardless of age and income.

According to The World Health Organization (WHO), hospitals are *health care institutions, which have organized a professional medical staff, and other facilities and can provide medical, nursing and related services 24 hours a day, 7 days a week.*

At the same time, in a report of the WHO Expert Committee, the hospital is defined as *an element of medical and social organizations whose function is to provide complete medical care to the population, both curative and preventive and rehabilitation. He can also be a center of medical education and bio-social research.*

Another WHO report underline the idea that in addition to basic medical work, the hospital is characterized by the hotel and restaurant activity: *the hospital is an institution able to receive suffering persons or suspected of suffering from an illness or injury, ensuring accommodation, food and medical care more or less long: observations, diagnosis, treatment and rehabilitation. He can provide external advice to ambulatory patients.*

In accordance with Romanian Law no. 95 of 14 April 2006 on healthcare reform (art. 165), hospitals are medical institutions (public or private) with beds, with judicial personality, providing medical services to persons hospitalized or outpatients and participating in the health of the population. These give preventive care, curative, rehabilitation and palliative care in case of pregnancy and maternity and also newborn.

Traditionally oriented towards caring for the individuals, hospitals are involved, intensely, in close contact with other parts of the healthcare sector and diverse communities in an effort to optimize the use of resources to promote and protect the individual and collective health.

In conclusion, hospitals are an expression of bureaucratic socio-economic organization of society which meets its medical and social problems. Max Weber, the pioneer and theorist of the administrative organization of institutions, notes that bureaucratic institutions are in fact effective tools in solving general problems due to their rational and organizational character. Therefore, the objective of a public institution is to serve the public interest, in case of a hospital to provide medical services.

The success of a hospital is given by the combination of economic methods, management techniques with specific field-specific experience and knowledge to be continuously updated and improved. Thus, despite of some specific activities, the hospital as an organization has characteristics in common with all other organizations, namely: the social dimension, specific goals, presence of planning and coordination activities.

3. Hidden costs of absenteeism

The concept of cost takes different meanings, depending on the purpose for which is determined, but clearly, the knowledge of costs represent a crucial role in decision making and future activities planning.

In the taxonomy of the described concept, *hidden costs* are the costs which were not identified by the information systems within the organization (budget, income statement, financial accounting, management accounting and dashboard) (Savall & Zardet, 2010). While a visible cost is characterized by a name (staff costs, costs of raw materials consumption, etc.), a measurement system (value) and tracking (surveillance), a hidden cost does not carry the same defining elements. Hidden costs are invisible because they are *included in other costs* and are so *due to the organization and human behavior*. The actual size of a hidden cost cannot be isolated or established with certainty.

The notion of hidden cost has been developed initially by Henri Savall and researchers from ISEOR (Institut de Socio-Économie des Entreprises et Organisations) and further on enhanced by the same authors. They define hidden costs as *the monetary expression of the regulation malfunctions* caused by noise, disturbance or deviations between the required and the established functionality of the company.

Malfunctions are a *source of improvement for the organization*, hence the increased interest to record and quantify the costs. The latter provides the staff with a common standard, which facilitates communication across the organization. The cost of abnormalities, malfunctions are often underestimated

because the hidden costs are never taken into account. They still affect the outcome of the institution, but being hidden, are not taken into account in management decisions.

The six types of malfunctions are translated into practice by dependence, in particular, to the following factors: *absenteeism, accidents, employee turnover, social conflicts, non-quality products or services provided by the organization and deviations from normal productivity for that institution*. These malfunctions prevent the organization to use resources in an efficient manner.

According to the Dictionary of Romanian Language, absenteeism is *thecommon and unauthorized absence from work*. In other words, absenteeism is defined as absence from work when attendance is planned or expected.

In one sense, absenteeism (behavior characterized by repeated absences) defines any absence that could be prevented early enough to prevent the degradation of the working conditions (physical conditions, but also work organization, quality of employment, conciliation between professional and private time, etc.). It is the evidence of deviant social behavior of employees, expressing a temporary and limited refusal to work, in other words, to be engaged in work organization.

In the distinction between *absence* and *attendance*, absence corresponds to an individual phenomenon, failure to work of an employee during working hours, (a situation which is not necessarily negative, due to the fact that absence may be authorized or justified (holiday, training, etc.)). On the other hand, absenteeism means a collective phenomenon (occurring with a high frequency), related to a behavior contrary to social expectations, characterized by unauthorized absences, failure to apply rules, procedures, contractual or motivated absence with a negative effect on organizational performance (Monneuse, 2009).

Absenteeism has a significant impact on entities, being both profoundly negative and a measure of the ability of institutions to offer high quality products and services respecting the deadlines and budgets. As a chronic phenomenon, it affects the morale of team work, disturbs the work of other employees, through the additional work that the latter must make to compensate for their colleagues and affects the quality of goods or provided services. Absent employees create an unfair overload to those who are present, because this constant miss disturbs the long-term environment; generates additional costs, delays and risks, in general reduces the productivity and efficiency of the organization.

Each employee likes to think that he or she is irreplaceable. In some cases, this may be true. In general, people that replace absent staff will be less productive, regardless of the type of absence.

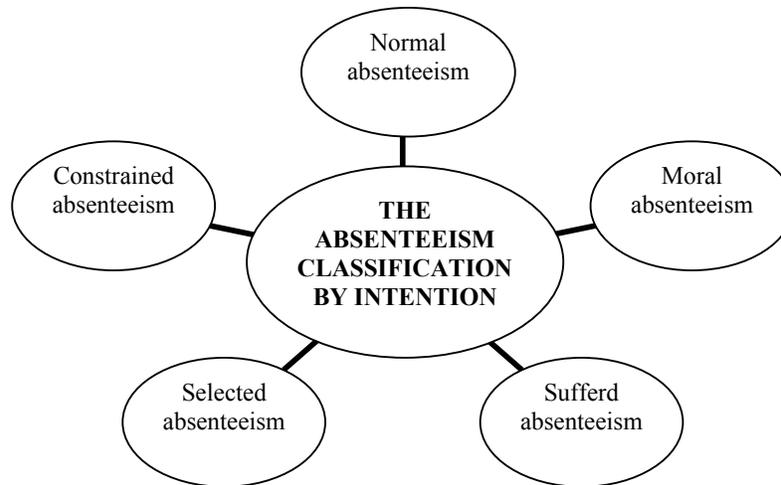
There are different criteria for the classification of absences: using time, cause, predictability, cost, method of remuneration, etc. as a criteria.

Based on the degree of predictability, there are two forms of absenteeism: predictable absenteeism and unpredictable absenteeism.

Predictable absenteeism includes legal holidays, compensatory days or legal holidays and is a form of provided and planned absence, which the manager can anticipate. This category of absenteeism does not have a real impact on the healthcare institution.

Unpredictable absenteeism includes sick leave, accidents, death, unjustified absences, etc. and generates a more or less high disable for institution work and performance. Unpredictable absenteeism is a phenomenon that should be monitored in order to avoid the negative consequences it generates.

However, the most relevant criteria for classifying absenteeism is the intention to miss work (Figure 1).

Figure 1: The absenteeism classification by intention

Depending on the intention with which the phenomenon appears, there are five categories of absenteeism:

- *normal absenteeism* - the employee is unproductive, sick, and therefore not operational for the employer. Included here: absenteeism dragged related to certain legal provisions (delegation of staff, trade union delegation, etc.) or normal absenteeism in working conditions (in a difficult working conditions absenteeism due to medical causes is higher), authorized holidays, absenteeism during training.

- *moral absenteeism* (internal absenteeism or presentism) - where employees are present physically at work, are absent from a mental standpoint, from implication, being inactive or performing tasks for personal use.

- *suffered absenteeism* - is the absence of an employee against their will (accident at work, transport strike, accidents, weather conditions, etc.).

- *selected absenteeism* - is the deliberate absence of employees from revealing bad faith reasons (absence from work to go to the theater, a sick leave while the employee is in perfect health or where, for various reasons was denied a holiday, etc.).

- *forced absenteeism* - is avoidable absences, chosen by the employee under the constraint (the employee failure to stay home with her child seriously ill, while the nanny or grandparents are not available, etc.).

The importance of hidden costs related to absenteeism depends on three key factors: absenteeism rate, causes of appearance of the absenteeism and cost control measures or decreasing of this phenomenon.

Measuring the absenteeism is made by weight indicator in a given period T, indicator calculated as:

$$\% \text{ Absenteeism} = \frac{\text{Number of absent hours or days in period } T}{\text{Number of work hours or days in period } T} \times 100 \quad (1)$$

The number of hours or days of absence shall not include absences considerate normal. Working hours shall not include public holidays and paid leave and is calculated for a period of normal working hours without overtime counted.

This index, calculated by age, sex, sectors, geographical areas, can be added the calculation of absenteeism per, the average duration of absence or frequency of absences employee:

$$\text{Employee absenteeism} = \frac{\text{Number of absent hours in period } T}{\text{Average of employees in period } T} \quad (2)$$

$$\text{The average duration of absence} = \frac{\text{Number of absent hours in period } T}{\text{Number of absents in period } T} \quad (3)$$

$$\text{Frequency of absences} = \frac{\text{Number of absent employees in period } T}{\text{Average of employees in period } T} \times 100 \quad (4)$$

In Romania, according to a study by consulting firm PricewaterhouseCoopers (PwC) Romania - Saratoga Human Capital Benchmarking Survey Romania, absenteeism rate decreased last year but is still above the average for Central and Eastern Europe. From the PwC report results that 1.4% is the share in Romania of days absence for the total working days compared with 1.1% in the region. Also in the PwC study draws attention to the phenomenon that in addition to classic absenteeism (when the employee is not physically present at work) and whose costs reach at around 1,000 euro / year / employee in the late period appeared in organizations another type of absenteeism "less visible but dangerous" lack of commitment and employee productivity at work, its cost being the salary amount paid for attendance, but unfair regarding the taken effort or the results.

A clear idea of how much is the cost of absenteeism in an entity doesn't exist. Analyzing this subject is facing with a small amount of information about size, causes and costs of absenteeism.

Study absenteeism in hospitals leads primarily to questions about the origin of absences. It is necessary to identify all the reasons why an employee is absent for a longer or shorter period of time to evaluate the impact of hospital organization and which are hidden costs involved.

The most common causes of absenteeism are health problems, although in some cases are highlighted more general problems, such as stress or monotony at workplace, repetitive and boring activities, poor interpersonal relationships, inappropriate management style, frequent transfers, wage levels, lack of incentives, rewards or improper value, industry, size of the institution, payment system of sick leave, weekdays, seasons and weather condition, geographical, etc. They can add more personal factors, such as: age, gender, personal values, character, dependence on alcohol and drug abuse, etc.

A study made by the company Kronos France shows that an average cost of absences (planned or unplanned) represent 20% of the salary of an organization. This number includes both direct costs, representing the payment of absent employees and indirect costs, such as loss of productivity or interim staff remuneration. The company Kronos France shows that the average of planned and unplanned absences result in a net loss of productivity by 21% per day.

A research conducted by Mercer's office shows that in American institutions, absences cost on average about 35% of the basic wage, compared to France, where it is assumed that absenteeism by 1% leads to an average cost of 1% of the wage.

To calculate the cost of absenteeism in some countries there are used different methods, but there are a lot of countries that are not using any method for this purpose and are not concerned with calculating the cost of absenteeism.

The Mercer's office had made a research in 14 European countries (*Mercer 2010 Pan-European Employer Health Benefits Survey on Issues*) on a total of 556 employers and the result was that, although 82% of companies monitor the length of employees absence, only 35% of them record the reasons and 27% are concerned with measuring costs.

Most employers are able to measure the length of employees' absence, although this varies from 92% for companies in Poland, from 69% in France. Measuring costs of absences - a complex and elusive value - is more common in the companies analyzed in Spain (50%), Ireland (48%) and Netherlands (42%). In contrast, only 12% of companies from Italy and 8% from France are able to evaluate the real cost of absenteeism.

Higher rates of absenteeism have been registered in companies from Austria, with an average of 9 days per employee per year, Germany and France with average absences of 8 days per employee per year.

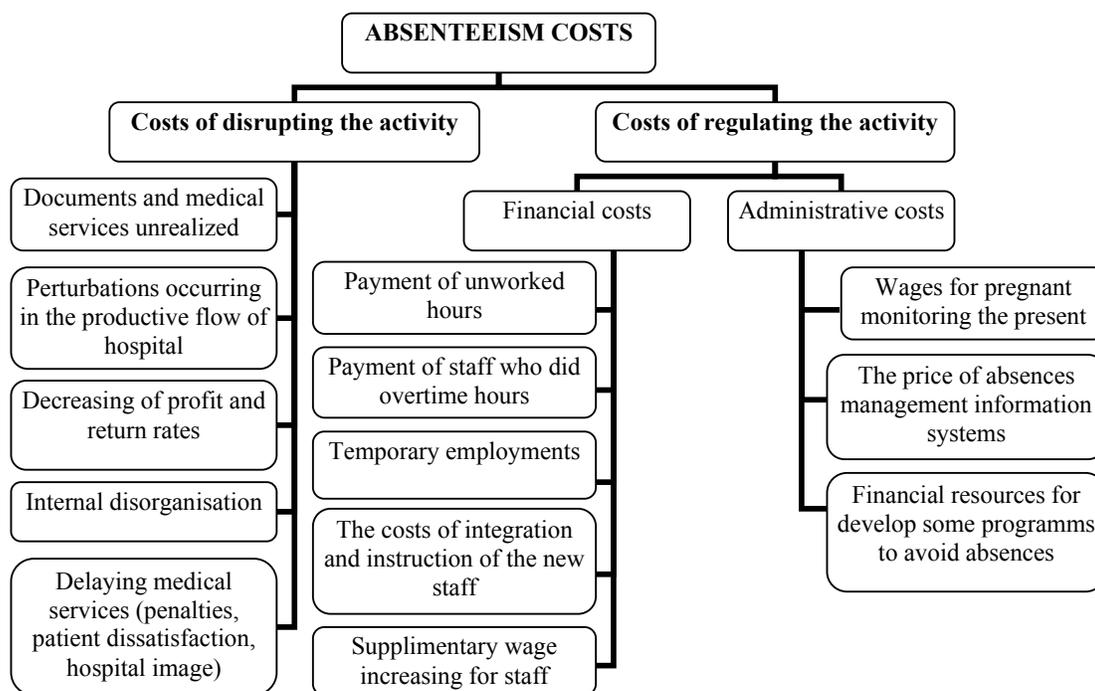
The cost of absenteeism is often misunderstood, seen as immeasurable or considered as having insignificant value. While most other expenses of the organization are clearly defined, the cost of absenteeism is an area not analyzed carefully.

Absences are not often seen as generating additional costs, because their cost is largely included in the cost of personnel. However, the majority of operational employees of the institutions are aware that absenteeism affects customer relations and put in danger the achievement of entity objectives.

Trying to make a typology of hidden costs arising from absenteeism into hospitals, there are identifies two categories of costs (Figure 2):

- *Costs of disrupting the activity* - from the fact that the absence of a person is the source of loss of earnings, an extension of the medical act or process etc;
- *Costs of regulating the activity* - associated with the measures and strategies to overcome the effects of absenteeism.

Figure 2: Absenteeism costs in hospitals



For a real management absence is necessary to monitor working time paid, but not worked (unproductive time), in the same way that is managed paid and work time (productive time).

Precise measurement of absenteeism and its costs is an impossible mission. Although institutions can purchase the latest software for human resource management, sometimes there may be *invisible* or *forgotten* absents. A doctor, who can claim to make an appointment at home, may very well spend the afternoon at the cinema. The persons responsible for monitoring absences can sometimes prove complicity.

Absenteeism is very costly to an institution. Of course, payment of holidays or sick leave is part of the costs associated with the normal functioning of an organization. However, unexpected and unplanned absences are affected by hidden costs too. Temporary employees that replace the absent, overtime and associated costs contribute to higher costs, while an additional burden at work for the present employees increase stress and on the long term, can be a motivating factor for unplanned absences.

The best methods for effectively combating absenteeism are (Armstrong, 2003):

- direct involvement* of management in reducing costs of absenteeism;
- increase the confidence* of employees from the beginning;
- implementation of computer systems to manage the situation of absences*;
- adopt a clear policy on the presence to work* and the position of the organization on absenteeism;
- regular training* of managers and heads of departments;
- interviews* with the opportunity to return to work;
- appropriate communication* and informing employees about the importance of eliminating absenteeism;
- introduction of counseling services* to address issues affecting presence;
- applying some disciplinary measures*.

Thus, the objective is to reduce costs and increase productivity while employers will aim to better monitor and manage absences. Absenteeism and its causes should be placed more on the agenda of national governments, employers and workers organizations. This focus should go beyond financial and economic issues to include health issues (healthy employees and healthy workplaces), improving communication with employees and motivating them, the introduction of flexible work schedules, promoting participatory management.

4. Conclusions

Malfunctions can be defined as disturbances or difficulties affecting the hospital operation reduce the potential economic performance and monetary implementation is given by the hidden costs. Hidden costs, absent so far from traditional approaches can provide new sources to increase economic performance, without social performance loss and without additional external financial sources.

Identify hidden costs and losses will allow assessment of additional costs (lack of income, under-production) and also indicate axes for a more successful business. They can not be reduced to zero, due to their partial cost incompressible. Moreover, some authors say that malfunctions are necessary and unavoidable.

So, even if you can not hope to reduce their total costs, hidden costs are a *huge economic stakes* for hospitals which know how to identify them. From this identification of the costs is born a search process for related causes and solutions.

The data provided is used by the structures that manage the institution and are involved in taking decisions to improve performance (cost, quality, productivity), allowing detection of causes with poor performance, improving organization and management to increase efficiency.

Socio-economic management is a solution to the difficulty of hospitals in changing elements in order to achieve financial efficiency without sacrificing either the principle of fairness, or the quality of the care provided. In view of this, the improvement is based on two levels: reducing malfunctions and strategic development. The goal can be achieved only if all actors involved in hospital activities participate in building strategy and are involved directly and especially in its implementation.

5. References

- Armstrong, M. (2003) *Managementul resurselor umane: manual de practică*, București: CODECS
- Bouquin, H. (2011) *Comptabilité de gestion*, Paris: Economica
- Cole, G.A. (2000) *Managementul personalului*, București: CODECS
- Deaconu, A.; Podgoreanu, S.; Rașcă, L. (2004) *Factorul uman și performanțele organizației*, București: ASE
- European Foundation for the Improvement of Living and Working Conditions (1997) *Preventing absenteeism at the workplace*, Luxembourg: Office for Official Publications of the European Communities
- Gavrilă, T.; Lefter, V. (2007) *Managementul organizațiilor*, București: Economică
- Horngren, Ch.; Bhimani, A.; Datar, S.; Foster, G. (2006) *Contrôle de gestion et gestion budgétaire*, Paris: Pearson Education France
- Horngren, Ch.; Datar, S.; Foster, G. (2006) *Contabilitatea costurilor, o abordare managerială*, Chișinău: Arc
- Law no. 95 of 14 April 2006 on healthcare reform
- Manolescu, A.; Lefter, V.; Deaconu, Al. (2007) *Managementul resurselor umane*, București: Economică
- Margoteau, É. (2001) *Contrôle de gestion*, Paris: Editions Ellipses
- Milkovich, G.T.; Boudreau, J.W.(1991) *Human Resource management*, Boston: Sixth Edition Irwin
- Monneuse, D. (2009) *L'absentéisme au travail – De l'analyse à l'action!*, Paris: AFNOR Editions
- Nicolescu, O.; Verboncu, I. (2008) *Fundamentele managementului organizației*, București: Universitară
- Niculescu, M.; Lavalette, G. (1999) *Strategii de creștere*, București: Economică
- Oi, J.W. (1974) On the Economics of Industrial Safety, *Law and Contemporary Problems*, Durham (N-C), vol. 34, no. 4, p. 669-699
- Opincaru, C.; Gălețescu, E.M.; Imbri, E. (2004) *Managementul calității serviciilor în unitățile sanitare*, București: C.N.I. Coresi
- Popescu, N.I. (2009) *Tendințe în managementul resurselor umane*, București: Tribuna Economică

- Roșca, Al.; Chircev, A.; Radu, I.; Zörgö, B. (1975) *Psihologie generală*, București: Editura Didactică și Pedagogică,
- Sava, D.; Menon, R.; „România – Sectorul de Sănătate. Studiu de politică sectorială” available at <http://siteresources.worldbank.org/INTROMANIAINROMANIAN/Resources/HealthSectorPolicyNoteRomanian.pdf>]
- Savall, H.; Zardet, V. (2010) *Maîtriser les coûts et les performances cachés*, Paris: Economica
- Școala Națională de Sănătate Publică și Management Sanitar (2006) *Managementul spitalului*, București: PUBLIC H PRESS
- www.businessmagazin.ro
- www.eurofound.europa.eu
- www.irsst.qc.ca
- www.healthtransformation.net
- www.kronosglobal.fr
- www.mercer.fr
- www.pwc.com
- www.who.int
- www.wikipedia.org

SCIENCE AND ETHICS – PUBLIC USE OF ACCOUNTING EXPERTISE IN CONTEXT OF THE FINANCIAL CRISIS

DOBRE Elena

*Ph. D. Professor, Faculty of Economic Sciences, Ovidius University, Constanța, Romania,
edobre2010@gmail.com*

PETRASCU Daniela

*Ph. D. Assistant professor, Faculty of Economic Sciences, Lucian Blaga University of Sibiu, Sibiu, Romania,
daniela.petrascu@yahoo.com*

Abstract: *Through the current period, marked by financial crisis, when opportunities tempt into taking risks, accounting expertise becomes necessary and useful in more and more commercial and criminal litigations. This paper brings into discussion the public use of accounting expertise, both as a scientific & professional research and as expertise in financial accounting.*

We intend to reveal some specific aspects related to the use of professional rules, in the setting of certain case studies that required competence and professional conscience. The linear relation between these ethical norms is often contradicted in practice, what makes identification of risks and factors of influence quite necessary.

Key words: accounting, audit, accounting survey, crisis

JEL classification: M 4

1. Introduction

We are being frequently pumped with information related to financial crisis, economic crisis, unemployment, recession, etc. Unfortunately, all these are contemporary facts.

If we can pass over it without being affected by all these is difficult to foresee, but it should not be neglected, an important instrument which can protect us or it might even save us from some economical disasters, namely: the accounting. (Petrascu, 2009).

In this paper we wish to draw to attention of the participants, and not only, the importance of financial survey in context of the financial crisis. If during the IECS conference in 2009 we were pointing out, rather timidly, an interesting aspect, namely that depending on the importance we grant to accounting, it may not protect us from the effects of the economic – financial crisis; in 2012 it is certain that if we did not grant this importance in due time, now we are in need of the chartered accountants works.

In order to enable understanding of these concepts, during this conference we strive to present a paper setting forth the importance of accounting survey both in theoretical acceptance and as subject to scientific research and, not last, in its practical importance.

2. Definition of the accounting survey concept, as the main activity of the chartered

Accountants are found as:

- judicial accounting survey, as disposed by the judiciary authorities;
- or as extra judiciary accounting survey (amicable), required under the law by individuals or legal entities.

Judiciary accounting survey may be disposed in civil and criminal causes, in labor law, as administration and management survey, financial – accounting survey etc. Survey is a notion that goes beyond the action of control and verification since in itself it constitutes the very idea of expressing the expert point of view. Survey is a personal and critical work, comprising not only the result of a factual examination in respect of formal and material accuracy, but also the expert opinion on the causes and effects related to the inspected object.

CECCAR resolved the professional regulation of the accounting survey by drawing up the professional standard 35: Accounting surveys.

Survey is the research activity carried into effect by a specialist bearing the quality of an expert, with the purpose to establish the truth in a litigious situation. The survey represents a mean, based on scientific research, to proof, ascertain, confirm, evaluate or elucidate a certain deed, circumstance, situation, cause or litigation. Judicial survey is accounting and technical and represents a mean of proof

that is ordered by request or appointment by the competent judicial body, in the situations when clarification of a fact or circumstance requires expert or specialized knowledge. (Decree, 76/1971)

In this context, **judicial accounting survey** – that cannot be specialized for different competence fields in industry, agriculture, constructions, budgeting, currency and banking operations since the branches of specialty *accounting, commercial law, public and private finance* do concern, both theoretically and in practice, all fields of economy. Also, these fields are precisely connected by legal, commercial and financial relationships whose accounting proceedings should be surveyed by the same chartered accountant. Contrary to these statements, there are opinions on the need of specializing chartered accountants in different competence areas, although accounting itself is a distinct specialty with competence applying to all economic fields (see the fiscal survey CCFR). The quality of a survey is often given by cooperation of the participants in its elaboration and by the clarity of the questions in need to be answered.

Questions posed to the expert must be a clear and concise expression of what needs to be established by examining the subjected materials; answers based on scientific examination of the materials must be asked, not suggesting solutions of the problems in relation to guilt or legal classification; questions will be formulated to determine doubtless answers, positive or negative; there are not to be required answers that may touch the authority of certain individuals or may prove injurious to their public image. (Poiana, 2006)

By **accounting survey** we understand the mission given to a chartered accountant to control the registers, accounts and supporting documents of a patrimonial entity, or the wealth of an individual, with the purpose to supply to the interested parties or to procure for justice specialized information, in order to rule knowingly in a civil or commercial litigation or in a criminal case. (Boulescu, 2001)

It follows from the above that accounting survey transitioned from the initial meaning, as *judicial accounting survey*, to the meaning of *professional expertise* in the field of accounting, company finances, commercial law, fiscal law, company evaluation, financial and accounting audit etc.

In our opinion any work of a chartered accountant must be done with the professional accuracy of a judicial survey, which serves as proof in justice. Such an approach will limit professional risk and will preserve professional credibility.

Accounting survey is, therefore, a form of scientific research carried out with the purpose of clarifying the way in which support documents and the technical-operative and accounting records reflect facts, circumstances or situations of an economic-financial nature.

As a specialized activity, accounting survey is characterized by the following elements;

- research of economic-financial, management and property facts or circumstances;
- its frame of actions include economic activity of the patrimonial entity in question and is limited at the objectives established by the competent judicial body or the interested individuals;
- accounting survey researches the situations and factual circumstances, based on the material support of the accounting, technical-operative or management records;
- it expounds the information from the records and expresses distinctly opinions with regard to the issues verified, based on laws and regulations ruling over the respective activity;
- it works out conclusions, based on the findings, to serve as proof or substantiation in the decision making process of the bodies or individuals that required the survey.

The accounting survey and audit, as evidence, are legally equal to the value of any evidence (witnesses, interrogation etc.). Infringements of the economic-financial regulations are established by the means of accounting survey, economic-financial relations between the litigating parties are deciphered; the economic-financial status of the patrimonial entity audited is established, in relation to the law and valid rulings, by establishing the causality connections and responsibilities for the investigated facts and circumstances. (Dobre, 2003)

As an outcome of the above, we shall here below enumerate in short some specific rules of professional conduct, specific for the missions of accounting surveys.

Independence– The accounting surveys can be run only by registered chartered accountants. The chartered accountant appointed to run an accounting survey must be independent from the parties interested in the survey, avoiding any situation that would imply a lack of independence or any constraint that may asperse on its integrity and objectivity.

Competence –The quality of chartered accountant, enabled to run accounting surveys is regulated. He/she must obey to the rules of the Body in relation to continuous education, update and permanent testing of the knowledge possessed. **Competence** requires that the certified accountant will apply the

knowledge, standards, abilities and needed expertise in supplying the performed services. (Petrascu, 2012)

Quality –The certified accountant should perform the surveys he was appointed for and he accepted with conscientiously, devotedly, correctly and impartially. The surveys should be useful to the ones who required them.

Professional secrecy and confidentiality –The appointed accountant must respect secrecy and confidentiality of the accessed and acknowledged information while auditing and not divulge any of these information to a third party, excepting the cases when he/she was explicitly authorized for this purpose or if he/she has the legal or professional obligation to proceed to this divulgation.

Rules of conduct related to the principle of confidentiality:

- manifest prudence in using the information gathered while performing professional tasks;
- will not use information with the purpose to obtain personal benefits, or in any other way that could be against the Law or in detriment of the legitimate or ethical objectives of the organization.

(Petrascu, 2012)

Accepting accounting surveys Inquiries to chartered accountants, in relation to performing audits, may only be refused for solid reasons. However, the chartered accountant, prior to accept to performing a survey, must thoroughly analyze the possibility of accomplish its mission, considering especially the rules of independence, competence and incompatibility.

Responsibilities of the chartered accountant: Responsibility of the judicial accounting surveys is strengthened by oath and of the extra judicial surveys is strengthened by contract.

Lacking strict adherence to the rules of professional conduct any discussion on accounting expertise is futile.

3. Conclusions

The conclusion is that integrity prevails and that this would be a quality that may or not be attached to the initial competence, acquired at the moment of professional authorization. We believe that by permanent professional grounding in ethics, integrity may not only occur rightfully but mostly rather as a state of mind.

In overview, in the current economic context of Romania, and not only, certified accounting surveys play a very important role, as documents of great importance in clarification of certain civil or criminal aspects. We foresee, for the not too distant future, the chartered accountant profession to have an important voice in clarification of the serious problems caused to economy by the financial crisis.

4. References

- Boulescu M., Ghiță M.,(2001), *Expertiza contabilă*, Editura Didactică și Pedagogică, București;
- Dobre E.,(2003), *Control financiar, expertiză contabilă și audit*, Editura ExPonto;
- Petrașcu Daniela,(2012), *Audit intern – Caiet de seminar*, Editura Universității Lucian Blaga din Sibiu;
- Petrașcu Daniela,(2009), *The economical crisis increases the accounting's importance!*, IECS 2009, Sibiu, ISBN: 978-973-739-775-1;
- Poiană I.,(2006), *Investigarea criminalistică a falsurilor filatelice*, Ed. Alma Mater, Sibiu;
- LEGAL: OG 65/1994 art. 6 let d; indicating that performing judicial accounting surveys is the exclusive right of the chartered accountants.
- PROCEDURAL: CPC and CPP and the Fiscal Procedure Code.
- PROFESIONAL: Rules of organization and operation of CECCAR pt. 112 let e (amicable accounting surveys, financial accounting, arbitration in civil cases, management surveys) and CECCAR Standard 35: Accounting surveys.
- Decree nr, 76/1971, regarding accounting and technical survey, published in B.Of. no. 32/March1971, abolished for accounting survey by OG nr. 65/1994, and for technical survey by OG nr. 2/2000

CRISIS TRANSMISSION AND EFFECTS ON FINANCIAL SYSTEM.EVIDENCE FROM ROMANIA

DORNEAN Adina

Ph. D. Assistant professor, Faculty of Economics and Business Administration /Department of Finance, Money and Public Administration, Alexandru Ioan Cuza University, Iași, Romania, amartin@uaic.ro

FÎRȚESCU Bogdan-Narcis

Ph.D. Assistant professor, Faculty of Economics and Business Administration /Department of Finance, Money and Public Administration, Alexandru Ioan Cuza University, Iași, Romania, firtescu@uaic.ro

Abstract: *This paper aims to highlight some channels of crisis transmission as identified by economic literature and try to estimate which are the variables that count most using an econometric equation. In order to analyze this, we use tables, graphical interpretation and regression equation based on Thorston Beck IMF Database. The development of the financial sector is difficult to measure, but we take into discussion quantitative development of the financial sector, using indicators such as: exports and imports as annual percentage change; the lending rate; domestic credit as a share of GDP in percentage change (end-year) as a measure for the size of the financial sector, data used from EBRD Database. We found that transmission channels on GDP were (in order of importance) exports and deposit rates.*

Key words: crisis, transmission channels, financial-banking system

JEL classification: E 44, G 01, G 21

1. Introduction

The epicenter of the financial crisis is in the United States of America (US) and European Union (EU) and this is also where the most substantial economic slowdown was experienced. Although developing countries were been affected by the crisis started in the developed countries, in the form of lower growth, higher unemployment and poverty, and changes in inequality, there are many and various channels that affect countries differently, depending on the extent to which they are vulnerable to particular channels.

The most important channels for crisis contagion from the developed countries to emergent ones that could be identified and some specific transmission mechanism in Romanian economy is approached in a larger background of the post-communist countries that faces transition.

The paper describes main channels of crisis transmission that are presented in economic literature and try to estimate which are the variables that count most using an econometric equation. In the second section of our study, we characterize the most important channels for crisis contagion from the developed countries to emergent ones, identifying some specific transmission ways to Romanian economy. In the third section, we highlight the evolution of major financial system indicators in the background of other post-communist countries that faces transition. Also, in our analyses we use tables, graphical interpretation and regression equation based on Thorston Beck IMF Database. (Beck T., WorldBank). Finally, we present our main conclusions.

2. The main channels

Presently, the financial and economic crisis is spread worldwide, its main feature being that "seldom respects national borders" (Roubini & Mihm, 2010). Thus, even though this type of crisis can start anywhere in the world, they can become global (Stiglitz, 2010) as long as the problems of one nation appear to be exported via diverse channels such as commerce, currencies, investments, derivatives in other countries. Consequently, the present crisis has its origin in the US but it propagated around the world at a fast pace, affecting real economy, economic growth, unemployment, and thus, having untoward side effects on international and national financial system.

The fast propagation of the crisis from the US to different countries, big or small, proves that there is a growing interdependency between national economies due to an intense market globalization, including the financial ones (Stiglitz, 2010). In this case, if one national financial system is suffering from a blockage, then the entire national economy is going to suffer because of its close interaction with national and international financial systems (Zaman & Georgescu, 2009).

The outcomes of international financial crisis are several. They affected countries in various ways. For example, short term harms could be bankruptcy of banks in the US and EU triggered by their insolvency and the impossibility of recuperating their claims from the real estate sector; bouleversement of stock markets; decline of industry and building sector etc.

The effects of this financial crisis on the global economy are complex and work across multiple channels (Collins, 2008). First, and most important, access to bank credit was likely to be highly restrained for a considerable period, as banks seek to reduce leverage and rebuild capital bases. Bank lending standards have already been ramped up sharply, and they are likely to tighten further as weakening economies further magnify bank losses, even while governments are providing public funds to help boost capital bases. Second, access to debt securities markets has tightened dramatically, not just for riskier low-grade borrowers but even for top-rated issuers and short-term securities. Third, the drop in equity prices and residential property values has eroded household net wealth. Fourth, emerging economies are also facing much tighter limits on external financing, as global deleveraging and increasing risk aversion have curtailed investor interest in these markets.

In this context, even though the effects of the global crisis are broad, our research is mainly focused on the channels that are favoring the transmission of its effects. Secondly, our research will underline the impact of the crisis upon Romanian financial and banking system.

Thus, the channels through which financial global turbulences might be transmitted, generating internal market crisis upon emerging economies have been described as follows (Reinhart & Rogoff, 2012):

- Banking crisis are the ones, which significantly lessen the global economic growth. The deceleration of economic activities badly hits exports, limiting the amount of strong currencies for emerging economies and weighing on their capacity to pay their debts.
- The reduction of economic growth rhythm is associated with the decrease of world merchandise prices. This triggers the decrease of export profits and the capacity of producers to pay their debts.
- Banking crisis of global financial centers in conjunction with the contractions of loan markets determines the decrease of capital influxes towards the emergent countries that have no connection with the main economic principles applied on the emergent markets. Thus, in these countries, the economic activity starts to diminish and the debts are pressing harder on declining state resources.
- Banking crisis has proven contagious because investors are withdrawing from the risk zones, presuming similar risk in different countries, reducing their exposure and suffering from it. This type of behavior affects as well the capacity of emerging economies to pay external debts.
- Banking crisis taking place in one country can induce a loss in trust in the economy of neighboring countries, or the ones with similar economies because creditors will adopt “one fits all” behavior.

The effects of international financial crisis were extended to the Romanian economy. However, in terms of direct impact, the banking system was less affected because it was not exposed to toxic assets and prudential and administrative measures had been taken over time by the National Bank of Romania (Isărescu, 2009).

Taking into account that the current financial and economic crisis started in US and it is an international one, it is important to determine the channels through which the crisis has spread to Romania, in other words, the channels through which the crisis has been internalized in the national economy. In terms of transmission of external crisis to Romania, Dinga (Dinga, Canale de transmitere a crizei externe în criză internă, 2009) mentioned that there are two important channels: real and nominal. Additionally, is also mentioned the institutional channel, less important, but should be considered because, for example, Romania is member of the EU, allowing rapid transmission of effects from one country to another.

Regarding the first channel, the most important external real variables which might affect the national economy are: a) foreign demand; b) labor migration; c) FDI and d) relocation of resident companies. Concerning the nominal channel, the most important external variables which might affect the national economy are: a) external financing (the structure of banking liabilities); b) the structure of banking assets and c) capital migration.

The closer connection of the Romanian economy to the international economic flows (real and capital) favored during 2000-2008 the catching-up process, but the spreading of the economic-financial crisis from the US and Europe also affected the Romanian economy, that from a growth of 7.3% of GDP in 2008 it found itself in the situation to experience in 2009 a significant decrease of the GDP of 7.1%. At the same time, the budget deficit in 2009 increased from 8.3% of GDP as compared to 5.4% of GDP during the previous year (NBR, Annual Report, 2009).

Thus, even if the present global crisis is a financial one, it may affect the real economy. Consequently, the literature (Dinga, Canale de transmitere a crizei financiare în criză economică, 2009) identified six main channels of transmission of financial crisis to the real economy: a) banking and inter-banking channel; b) channel of last resort financing; c) commercial channel; d) budget channel; e) psychological channel; f) idiosyncratically channel.

Economic literature mentioned three main channels of crisis transmission (Naudé, 2009) from developed to emerging countries, such is the case of Romania in the context of the current crisis:

- Banking failures and reductions in domestic lending. Directly, banks in developing countries may be affected to the extent to which they hold assets contaminated by subprime mortgages, that is not the case of Romania, because as we have mentioned before the Romanian financial system it was not exposed to toxic assets. Reductions in bank lending will have the impact of reduced investment, lower growth and an increase in unemployment. The latter will lead to reductions in demand which, in turn, will reduce economic growth further. Taking into account that government revenue depends on growth, this will translate into less government revenue.
- Reductions in export earnings. Romania has suffered due to the reduction of the main export markets for the Romanian products, which was reflected in the current account. The current account deficit – one of Romania's main vulnerabilities at the time the crisis broke out – remained at a moderate and sustainable level (4.1% of GDP) in 2010 (NBR, Financial Stability Report, 2011). The forecasts point to a slight increase in the deficit, without however exceeding 5% of GDP during 2011-2012.
- Reductions in financial flows to developing countries: private investment flows to developing and emerging countries will decline as more risk averse investors move their funds to perceived "safer" havens (Naudé, 2009). The authorities offset the considerable withdrawal of net short-term interest-bearing flows in 2009 (net outflows worth EUR 8.8 billion) by signing a financing arrangement with the EU, the IMF and the World Bank. Net short-term capital inflows resumed in 2010 (EUR 2.3 billion net increase) and continued into 2011 H1 as well (EUR 2.8 billion worth of net inflows) (NBR, Financial Stability Report, 2011). Even so, the volatile and pro-cyclical nature of such capital flows remains however an issue, given the fluctuations in international investors' risk aversion not only to Romania, but also at global level, particularly in emerging economies.

Griffith-Jones S. and Ocampo J.A. identified three mechanisms (Griffith-Jones & Ocampo, 2009) that play a key role in spreading the consequences of the financial crisis to the developing countries: remittances, capital flows (The effects take place both through volumes and associated costs of such flows) and trade (through a decline in trade volumes).

Regarding Romania, it was affected through *the contagion effect*, given the very high dependence of the public and private sector upon the foreign capitals, to which added the major macroeconomic imbalances (current account deficit, public structural deficit etc.) accumulated by the national economy during the period precursory to the starting of the world financial turbulences.

In Romania, although the impact of the financial crisis on the economy was major, it had mainly manifested indirectly. The transmission of the impact of the crisis was done through *five channels*:

- *The external commerce channel* – as a result of the reduction of the main export markets for the Romanian products. The dynamics of the world economy have re-entered positive territory (5.1% in 2010 versus -0.5% in 2009), but the outlook points to a risk of slower growth rates. Countries are expected to post relatively significant dynamics differences, reflecting specific structural and incidental conditions, which may put pressure on global financial stability. According to the European Commission's spring 2011 forecast, in 2011, Romania will most likely be among the economies with relatively slow growth rates, i.e. 1.5 percent against 2.9 percent, the average for the CEE countries (NBR, Financial Stability Report, 2011), but the country is expected to resume faster growth starting with 2012.

- *The financial channel*– on the background of the reduction of the external private credit lines from the parent banks, with impact on the evolution of the non-governmental credit. In Romania, after the onset of the crisis, parent banks further contributed capital to their Romanian subsidiaries, ensuring more than 95% of the external financing attracted by the latter in 2010 (NBR, Financial Stability Report, 2011).
- *The trust channel*– through the increase of the aversion to risk of the foreign investors. In July 2011, Fitch rating agency upgraded Romania’s credit rating to the pre-crisis level, i.e. BBB-, corresponding to “investment grade”. Moreover, the credibility of government policies allowed further access to external financing even in the periods when global investors exhibited stronger risk aversion (NBR, Financial Stability Report, 2011).
- *The foreign exchange channel*– due to the depreciation pressures of the RON.
- *The wealth and balance effectchannel*– at the same time with the substantial reduction of the value of several categories of assets, especially real estates, dominant within the asset class used as banking collateral, as well as through the increase of the ratio of bad loans in the assets of the credit institutions. In 2010, net wealth of the population decreased by 8% compared to 2009, due to the decline in prices of real estate assets, which hold the largest share (NBR, Financial Stability Report, 2011).

3. Financial System in the Context of Crisis. Evidence from Post-Communist Countries

3.1. The Case of Romania

Before 1990, the structure of the Romanian financial system was similar to that of other centralized economies. Since 1991 the Romanian financial system metamorphosis took place at the changes taking that premise to introduce a system organized on two levels – National Bank of Romania, the central bank independent, i.e. commercial banks – and banking legislation that boosted the role of commercial banks in the economy, a role closely related to their role as principal intermediary in relation to savings – investment, crucial to economic growth relationship.

In Romania, the funding system was heavily dominated by the banking sector, here manifested prominent financial intermediation. Dominance of the banking sector in financing the economy is explained by several factors such as underdevelopment of capital markets, taxation still disadvantageous exchange, saving more attractive offers banking, investment culture, etc. Also, the legacy of a network of banks in the statist period where banks were those that accounted for the economic activity of enterprises without financial independence was an advantage. In turn, the financial system (and consequently the funding) has seen significant structural change after the crisis of the late ‘90s. As the Romanian economy has gone from being an emerging market economy and increasingly approached the status of functional market economy, there is a continuous development of capital market and the higher involvement in financing its economy. Financial market development and growth is observed market capitalization to GDP. This upward trend was due to price quotations made by the majority of shares admitted to trading, which were added capital increases made by some companies by capitalization of reserves or by issuing shares offered for subscription to their shareholders.

Romania had severe structural problems in its banking sector. From the beginning of the two-tier system in 1990 through 1998, state-owned specialty banks and the state savings bank dominated Romanian banking. The big five state-owned banks were: Bancorex, the foreign trade bank, Banca Romana pentru Dezvoltare (BRD), the investment and development bank, Banca Agricola, the renamed Bank for Agriculture and Food Industry, Casa de Economii si Consemnatiuni (CEC), the traditional state savings bank, and Banca Commerciala Romana (BCR), created from the commercial assets of the National Bank of Romania in 1990. This five bank institutions concentrate 73% of banking assets at the end of 1995. Bank lending to state enterprises without serious credit standards was common and soon a large portion of commercial bank loans were non-performing (Bonin & Wachtel, 2003).

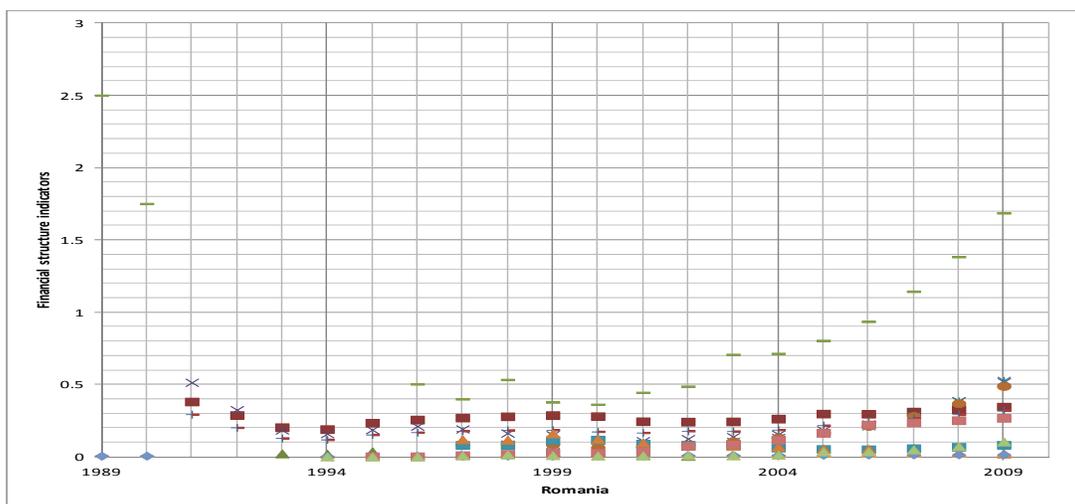
Further, we take into discussion some important changes of financial system during transition and construct an image matrix (Beck, Demirguc-Kunt, & Levine, 2010) that show the most important indicators of financial system structure:

- liquid liabilities / gdp
- central bank assets / gdp
- deposit money bank assets / gdp
- private credit by deposit money banks / gdp

- private credit by deposit money banks and other financial institutions / gdp
- bank deposits / gdp
- financial system deposits / gdp
- bank credit / bank deposits
- bank overhead costs / total assets
- net interest margin
- life insurance premium volume / gdp
- non-life insurance premium volume / gdp
- stock market capitalization / gdp
- stock market total value traded / gdp

An overview of financial system structure is presented in Figure 1:

Figure 1: Financial system structure in Romania



Source: World Bank Database, (Beck, Demirguc-Kunt, & Levine, 2010)

- LIQUID LIABILITIES / GDP
- ▲ CENTRAL BANK ASSETS / GDP
- × DEPOSIT MONEY BANK ASSETS / GDP
- ✕ PRIVATE CREDIT BY DEPOSIT MONEY BANKS / GDP
- PRIVATE CREDIT BY DEPOSIT MONEY BANKS AND OTHER FINANCIAL INSTITUTIONS / GDP
- + BANK DEPOSITS / GDP
- FINANCIAL SYSTEM DEPOSITS / GDP
- BANK CREDIT / BANK DEPOSITS
- BANK OVERHEAD COSTS / TOTAL ASSETS
- ▲ NET INTEREST MARGIN
- LIFE INSURANCE PREMIUM VOLUME / GDP
- ◆ NON-LIFE INSURANCE PREMIUM VOLUME / GDP
- STOCK MARKET CAPITALIZATION / GDP
- ▲ STOCK MARKET TOTAL VALUE TRADED / GDP

As displayed in Figure 1, indicators in 2009 are closer to values of 1991: LIQUID LIABILITIES / GDP fluctuates from 0.3804 in 1991 to 0.3454 in 2009 –suggesting a boost increase of overall financial liquidity, indicator FINANCIAL SYSTEM DEPOSITS / GDP is within 0.2932 (1989) and 0.3212 (2009).

The overall evolution of the Romanian financial system can be separated into two periods: 1990-2001 when the indicators follow a sinuous progression and after 2001 when all indicators had a growing trend.

3.2. Regression Analyses and Results (26 post-communist countries)

To analyze the importance of some financial indicators for economic evolution (we consider an important indicator to be in this case GDP growth) of Romania, we estimate through a regression equation possible effects of these indicators.

Some studies have found significant effects of inflation and reforms on economic growth in transition countries (T. & Sutela, 2005). Economic literature also states that in addition to structural reforms, initial conditions at the beginning of transition also determine later economic development.

We analyze the link between efficiency and size of the banking sector and GDP growth changes using panel data for 26 post-communist countries (most of them are from Central and Eastern Europe) during the period 1989-2010. After analyzing possible regression models (GLS or Fixed Effects), performing the Hausman test, we choose random effects. We select data referred to countries from European Bank for Reconstruction and Development - EBRD database (data for Mongolia were not taken into account because of large differences compared to the other countries included in our analyses) for measuring economic changes in terms of annual real GDP growth. The development of the financial sector is difficult to measure, but we take into discussion quantitative development of the financial sector. Data description is presented in Table 1.

Table 1: Data description of model variables

gdp	GDP
exports	Exports of goods and services
imports	Imports of goods and services
dom credit	Domestic credit (end-year)
dep rate ly	Deposit rate (1 year)
lend rate ly	Lending rate (1 year)

Data statistics are presented in table below.

Table 2: Data statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
year	638	1999.5	6.349267	1989	2010

country	638	15.41379	8.797634	1	30
gdp	629	1.575405	9.963761	-60	86
exports	457	5.733589	15.45617	-45.87	92.6
imports	442	6.746629	17.09997	-36.43	213.3
dom credit	440	53.11773	171.7397	-137.19	2603.44
refin rate	464	27.70198	65.71364	0	848
dep rate ly	469	19.40486	39.67824	0	435
lend rate ly	461	28.03544	47.80636	0	500

The equation is stated below:

$$(1) \text{gdp}[\text{country},t] = a + Xb + u[\text{country}],$$

where X refers to variables.

The regression analyses (the results of the panel regression fixed effects are presented in Figure 2) suggests that some variables taken into discussion affect GDP change (in percent), being statistically significant: exports (at 5%), deposit rate (at 5%), imports (not statistically significant), domestic credit (not statistically significant), lending rate (not statistically significant). We conclude that exports, exchange rate, banking reform had a positive effect on GDP change, while deposit rate has an inverse effect, and could be transmission channels. These factors explain in a proportion of about 37% the evolution of GDP changes over time (overall r-squared value is 0.3782). The model suggests that transmission channels on GDP were (in order of importance) exports and deposit rates

Figure 2: Regression analyses in data panel results

Random-effects GLS regression	Number of obs =	360
Group variable: country	Number of groups =	27
R-sq: within = 0.4721	Obs per group: min =	6
between = 0.1723	avg =	13.3
overall = 0.3782	max =	20
corr(u_i, X) = 0 (assumed)	Wald chi2(5) =	268.32
	Prob > chi2 =	0.0000

gdp	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
exports	.1709175	.0191663	8.92	0.000	.1333521 .2084828
imports	.0043867	.0165918	0.26	0.791	-.0281327 .0369061
dom_credit	-.0000386	.0017595	-0.02	0.982	-.0034871 .0034098
dep_rate_ly	-.1394945	.0238551	-5.85	0.000	-.1862497 -.0927393
lend_rate_ly	-.0077096	.0167384	-0.46	0.645	-.0405164 .0250971
_cons	5.444392	.4577141	11.89	0.000	4.547289 6.341495
sigma_u	1.4468257				
sigma_e	4.2414001				
rho	.10423381	(fraction of variance due to u_i)			

Source: author's calculation.

For the Romanian case, as literature suggests, from the last quarter of 2008, financial and economic crisis impact on banking sector was manifested increasingly pronounced in the indirect lane (Nistor, Pintea, & Ulici, 20101), namely that of external liquidity and the deterioration of macroeconomic conditions.

Arguments supporting the claim that in Romania will be felt only indirectly the effects of international crisis are as follows:

- in Romania there are no securities guaranteed with mortgages;
- the mortgage credits granted by the Romanian banks have a very good quality and still are solidly guaranteed;

- the proportion of the mortgage credits within the total non-governmental credit is still low (8%), but we should not forget that there are long-term consumption credits which finance real estate projects (Pop, 2009);
- the level of bank capitalization is high and may cope with possible unexpected losses;
- Romania's foreign reserves of EUR 33 387 million (at February 29, 2012) is an important buffer factor to counter negative effects even if the tightening of credit (credit crunch).

However, the limited effect of contamination of the Romanian financial system does not exclude the impact of the international financial crisis on the real economy real, as we have seen, considering its openness to the world economy. Any delay in the approach of further structural reforms will make shocks of the recession from other regions to be felt more painfully by Romanian economy.

Given the important effects of the global financial crisis, it is necessary to find solution in order to limit and counteract the effects of the present global financial and economic crisis. Immediate and short-term policy responses are required to ensure that the financial crisis is contained, that confidence in financial systems is restored and that the impact on the real economy is minimized. Over the longer term, countries should focus on strengthening their financial systems within the context of reforming the global financial architecture. Domestic financial development depends on a better global financial architecture and vice versa.

4. Conclusions

The shock wave started first in the US has rapidly spread all over the world, as a result of the interconnections between the economies of different states, but nevertheless the transmission and the impact of the crisis on the economy of each country is different, depending on its peculiarities.

The overall balance between fragility and robustness of financial structure, depending on the cyclic stability of the economy, is related to loans. As literature suggests (Minsky, 2011), cash flow support a robust financial structure, whereas an emphasis on the value of collateral and the expected value of assets is a factor towards a fragile financial construction, making system vulnerable to crisis.

According to the monetary authorities, the major challenges (NBR, Financial Stability Report, 2011) lying ahead are: to manage the contagion risk that could become manifest in the event of adverse developments on international markets as a result of the sovereign debt crisis or the considerably slower growth in developed economies; to improve bank asset quality; to achieve a more balanced currency breakdown of flows of new loans, and to enhance the early intervention tools for ailing credit institutions. These challenges call for further efforts to maintain adequate solvency, provisions and liquidity, as well as for additional prudential measures.

Future research directions could take into discussion other variables, such as non-performant loans, the foreign direct investments, the uses of early warning systems in prevention of crisis.

5. Acknowledgments

This work was supported by the project "Post-Doctoral Studies in Economics: training program for elite researchers - SPODE" co-funded by the European Social Fund through the Development of Human Resources Operational Programme 2007-2013, contract no. POSDRU/89/1.5/S/61755.

6. References

- Beck, T. (n.d.). WorldBank. Retrieved from <http://go.worldbank.org/X23UD9QUX0>
- Beck, T., Demirguc-Kunt, A., & Levine, R. E. (2010). *Research at the World Bank*. Retrieved from The World Bank: <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:20696167~pagePK:64214825~piPK:64214943~theSitePK:469382,00.html>
- Bonin, J., & Wachtel, P. (2003). Financial Sector Development in Transition Economies: Lessons from the First Decade. *Financial Markets, Institutions & Instruments*, 12 (1), 1-66.
- Collins, C. (2008, December). *The Crisis through the Lens of History*. Retrieved from Finance&Development, IMF: <http://www.imf.org/external/pubs/ft/fandd/2008/12/pdf/collins.pdf>
- Dinga, E. (2009, May 3). *Canale de transmitere a crizei externe în criză internă*. Retrieved from EDinga.ro: <http://www.edinga.ro/files/comunicate/56.pdf>
- Dinga, E. (2009, May 05). *Canale de transmitere a crizei financiare în criză economică*. Retrieved from EDinga.ro: <http://www.edinga.ro/files/comunicate/57.pdf>

- Griffith-Jones, S., & Ocampo, J. A. (2009). The Financial Crisis and its Impact on Developing Countries. *International Policy Centre for Inclusive Growth* .
- Isărescu, M. (2009). *Criza financiară internațională și provocări pentru politica monetară din România*. Retrieved from National Bank of Romania: <http://www.bnro.ro/files/d/Noutati/Prezentari%20si%20interviuri/R20090226Guv.pdf>
- Minsky, H. (2011). *Stabilizing an Unstable Economy*. Bucharest: Publica Publ.H.
- Naudé, W. (2009, January). *The Financial Crisis of 2008 and the Developing Countries* . Retrieved from UNU-WIDER: http://www.wider.unu.edu/publications/working-papers/discussion-papers/2009/en_GB/dp2009-01/
- NBR. (2009). *Annual Report*. Retrieved from National Bank of Romania: http://www.bnr.ro/files/d/Pubs_ro/Anuale/RA2009.pdf
- NBR. (2011). *Financial Stability Report*. Retrieved from National Bank of Romania: http://www.bnro.ro/files/d/Pubs_ro/RSF/RSF2011.pdf
- Nistor, I., Pinteau, M., & Ulici, M. (2010). The Implications of the Global Crisis on the Financial Performances of the Romanian Banking System. *Scientific Annals of the "Alexandru Ioan Cuza". Economic Sciences Section*, 149-159.
- Pop, N. (2009). *Financial Crisis. Challenges for Romania*. *Financial Studies*, 13 (1), 89-99.
- Reinhart, C. M., & Rogoff, K. (2012). *This Time is Different: Eight Centuries of Financial Folly*. Bucharest: Publica.
- Roubini, N., & Mihm, S. (2010). *Crisis Economics: A Crash Course in the Future of Finance*. Bucharest: Publica Publ.H.
- Stiglitz, J. E. (2010). *Freefall: America, Free Markets and the Sinking of the World Economy*. Bucharest: Publica.
- T., K., & Sutela, P. (2005). *Financial Systems in Transition: Could Small Actually Be Beautiful?* *Eastern Economic Journal*, 295-312.
- Zaman, G., & Georgescu, G. (2009). *The Impact of Global Crisis on Romania's Economic Development*. *Annales Universitatis Apulensis Series Oeconomica*, 22 (2), 611-624.
- Data provided by EBRD - European Bank for Reconstruction and Development. Retrieved from: <http://www.ebrd.com/pages/research/economics.shtml>.

THE FINANCIAL RISKS OF THE ENTITY

DUCU Corina

Teaching assistant/ Ph. D. Student, Finance – Accounting Department, Constantin Brâncoveanu University of Pitești, Pitești, Romania, corina_ducu@yahoo.com

Abstract: *There are different causes that expose the economic and financial operations to certain risks during their carrying out. Risks in the economic activity arise from the use of financial instruments, the use of different funding sources and from the decisions taken in carrying out new investments. The current economic-financial turbulence in which we are has highlighted the importance of the correct understanding of the financial instruments and of the risks arising as a result of their holding and trading. Therefore, the reduction of the financial risks affecting the entity's profitability contributes to the successful achievement of the set objectives.*

Key words: financial risks, financial instruments, internal audit, external audit, financial performance.

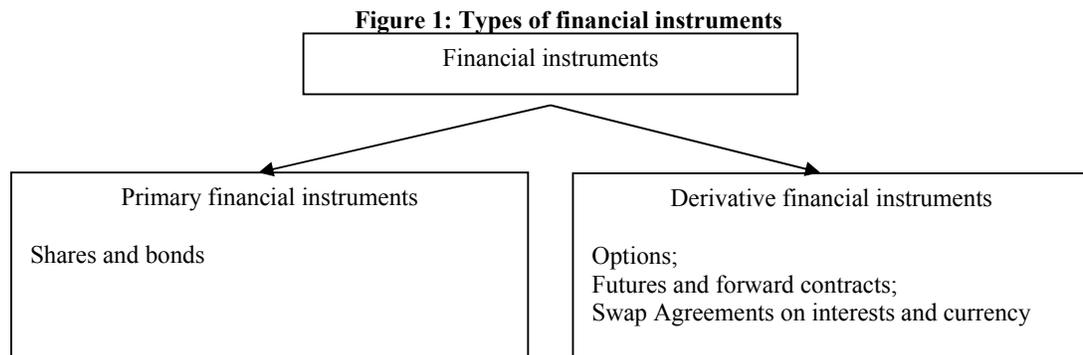
JEL classification: M 4

1. The Financial risks – threats to economic performance

“The entity's performance is often defined and measured by profit and it is presented in the financial structures by the related revenues and expenses” (Vișan, 2006). The information on performance, particularly the one relating to profitability, is useful for: anticipating the entity's ability to generate cash flows using the existing resources, developing the reasoning on the efficiency with which the entity can make new resources and users of the financial statements. Financial performance is subject to financial risks arising from the implementation of various economic and financial operations.

“Risk represents the uncertainty of a result disguised as a positive probability or as a threat, as actions or events, and it should be managed in terms of a combination between the possibility of something happening and the impact that the materialisation of this possibility would cause”(Treasury. 2004). “Financial risk expresses the variability of the results indicators under the entity's financial structure (the proportion between equity and debt) and it strictly derives from the entity's indebtedness” (Borlea, site accessed on 12 December 2011). MacMillan Dictionary of Economics states that “the financial risk, is the risk that arises from financing through loans and the economic risk, specific to all the activities within an entity” (MacMillan Dictionary of modern economics, 1999).

The national and international economic situation has given special connotations to the risks generated by the decisions taken to achieve new investments, suggesting the importance of the correct understanding of the financial instruments, as well as of the risks arising as a result of holding and trading them.



Source: Personal contribution

From this point of view it is important to address the business financing while being well-informed from the point of view of the financial instruments, which in the given meaning can be: primary financial instruments and derivative financial instruments.

The holders of funds issue the financial instruments either for mobilising the equity (shares) or to attract loan capital (bonds). This type of instruments ensures the attraction of long-term capital and it

offers a number of rights on the issuer's money income. The characteristics of the primary financial instruments led to their segregation into two distinct categories: variable income (shares) and fixed income (bonds).

An economic entity will recognize the shares when it issues securities to establish or increase its own capital. This investment decision is subject to risks and uncertainties of the following types:

- possible loss of the shareholder, when the trading price drops on stock market, taking into account the fact that the past performance of the shares is no guarantee for future performance;
- denial of dividends by the issuer;
- failure to achieve the expected profitability of the issuer;
- material liability according to the invested amounts, etc.

Accounting recognition of the bonds will be done when the entity invests in credit instruments issued by entities or agencies of the central and local public administration in order to fund certain activities or to fund the budget deficit. The investment made in such securities is not spared from the possibility of undergoing risks and uncertainties such as:

- the interest rate risk, namely the possibility to record a loss by the holder of the bonds due to changes in the interest rates on the market;
- the risk of redemption before maturity for the bonds with redemption clause, with the consequence of producing some cash flows lower than expected because the unmatured bonds can be redeemed at a time when the interest rates on the market record lower levels; they reflect in the risks related to reinvesting the proceeds;
- credit risk, which may be a bankruptcy risk of the issuer generated by the possibility that he cannot meet his implied obligations;
- inflation risk, namely the possibility that the future value of the investment or of the attached income may not be correct due to the effect of inflation, etc.

If the investment decisions of the entities move towards taking the clauses of some contracts settled on the established date, the accounting recognition will be towards the derivative financial instruments. In these cases an initial investment is not often required, but their value changes according to the interest rate, the exchange rate and the price of a security. The most frequently used derivative financial instruments are the following:

- the forward contract - agreement of will between two parties, in which the seller undertakes to deliver to the buyer at a certain date a financial product at a price determined upon the conclusion of the contract.
- the futures contract - agreement of will between the parties to deliver/take on a certain date a financial product at a certain price set upon the conclusion of the agreement, given that at the due date the operator's position remains the same.
- options contracts – agreement of will between the parties through which the seller of the option will sell the buyer the right to buy or sell an asset.

The trading of derivative financial instruments may not be beneficial for all investors. Consequently, there may be losses during very short periods of time. The amounts lost can amount to a very large sum and they may exceed the initial deposit placed in the trading account opened at the financial investment services company. Trading on the futures market can generate the following:

- the risk that the losses of the holders of these instruments may exceed the amount already existing in the margin account;
- the position risk, generated as a result of the market evolution in another sense than the one expected by the investor;
- the marking risk on the market, which arises as a result of the movements in the account due to exchange rate evolution;
- the exercise risk, when through the position of seller of an option, the investor is exposed to the unfavourable price by the purchaser's exercising of the option – for the options contracts;

The Accounting Standard 32 "Financial Instruments: Presentation" refers to the financial risks that might occur within an entity; risks directly related to holding financial instruments, namely:

- price risk, which refers both to the risk of potential loss due to lowering the sales price, respectively the increase of the purchasing price;
- credit risk, which refers to the possibility that one of the contracting parties of the financial product does not perform his/her obligations, causing thus the other party a financial loss;

- liquidity risk (funding risk), which means that an entity may face difficulties in procuring the funds necessary to achieve the commitments specific to the financial instruments;
- the cash flow risk occurs when the values of the cash flows specific to a financial instrument may fluctuate;
- the cargo risk, which refers to the cases in which the entities whose businesses are abroad cannot control the price of the goods, which leads to the situation in which the possible changes may reflect on the financial results. Generally, the goods traded and subject to risk are: natural gas and coal; industrial metals; precious metals; agricultural goods.

The development of an entity, ensuring the production capacity, the competitiveness and the long-term profitability depends on the investment decisions taken by the entity. These can be influenced by risks which, according to the features and effects they produce, can be grouped into:

- risk of failure, caused by the expenses incurred for the investment, which affect the entity's solvency;
- operational risk, associated to the uncertainty of the activities and results arising from the investment;
- financial risk arising as a result of contracting some funding necessary to achieve the desired investment.

Thus, if one relies on loans, the entity takes on its financial obligation to conduct a series of expenses with the interest rates, resulting in a change of the results.

Financing the entity's activity on account of the internal resources (such as reinvested earnings, the set reserves) does not imply taking on new payment obligations which generate financial risks, such as in the case of funding from the financial creditors. The higher the share in the funding sources of the obligations from the loans payment, the higher the financial risk is.

2. Financial risks identifying instruments

Entities face many financial risks specific to the activities they carry out, risks that can be high, medium or small, and which evolve continuously. The management, in order to address these risks and to reduce them to a level as low as possible, develop internal control systems, implement their own internal audit departments and at the end of the financial year they submit their financial statements to the external audit.

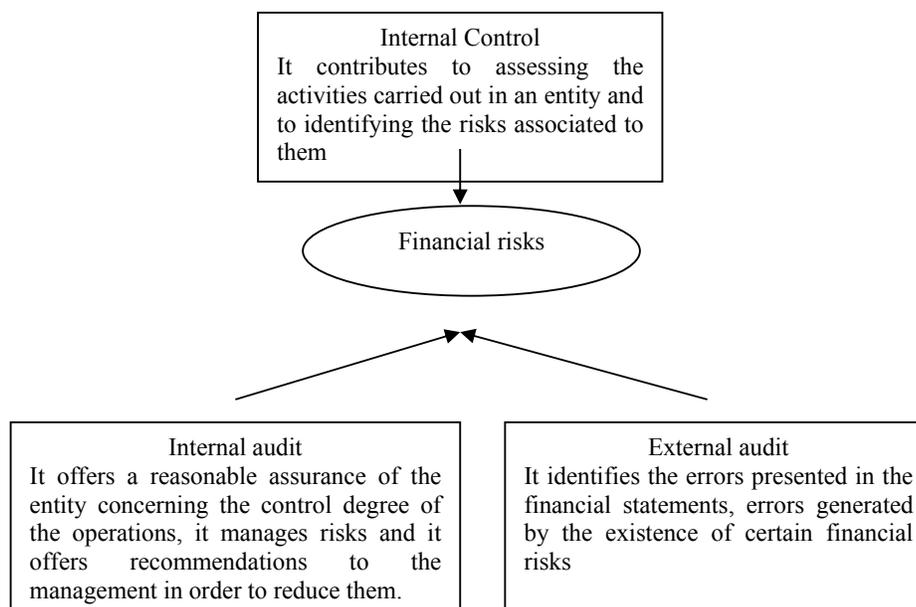
Internal control is considered "a process implemented by the organisation's management which intends to provide reasonable assurance regarding the achievement of the objectives grouped into the following categories: effectiveness and efficiency of operation; reliability of financial information; compliance with laws and regulations" (The Committee of the Sponsoring Organisations of the Treadway Commission)

Internal control does not only represent the implementation of procedures, techniques and programmes, but it is also a process achieved by the staff at all levels within the entity. It is influenced by the managers' leadership style, by the risks and by the entity's organisational structure.

The entity's management should identify these risks, evaluate them and take actions to maintain them at an acceptable level. The purpose of risk assessment is to reduce the errors, fraud or bankruptcy of the entity. In these circumstances the implementation of a control system is considered to be the answer of management to the risks associated to the activities carried out.

Internal audit is considered to be "an independent and objective activity that assures the entity regarding the degree of control over operations, it guides it to improve its operations and it contributes to adding value. Internal audit helps the organisation to achieve its objectives by evaluating, through a systematic and methodical approach, its risk management processes, control, and governance of the organisation, making proposals to strengthen their effectiveness" (Institute of Internal Auditors).

The internal audit function, by the processes it carries out, is concerned if the entity's organisational culture accepts the risk and perceives it as a corporate element or it makes a series of activities that lead to minimising it.

Figure 2: Instruments used for identifying the financial risks

Source: Personal contribution

Internal auditors should be the first specialists within the entity that are aware of the existence of risk and the importance of its management.

The impact of financial risk is reflected in the entity's financial performance.

According to International Financial Reporting financial performance is seen in the light of: revenues, expenditures and financial results. The information on the financial structures mentioned above is offered by the following financial statements: Profit and loss control and explanatory notes.

The objective of an audit of the financial statements is to provide an opinion on the financial statements, if they are prepared according to all material respects, in accordance with an applicable financial reporting framework (ISA 200).

It is therefore necessary to make an external audit to identify the existing irregularities in the financial statements, irregularities caused by the existence of financial risks.

Financial risk management strategies:

By identifying the financial risks with the help of the instruments mentioned above, we also consider it necessary to develop the strategies that lead to a reduction of the threats the entity has to face. Thus, the fighting strategies for each category of risk have been identified:

► Use of primary financial instruments - Shares:

- the entity will issue new shares to increase the social capital only with the consent of General Meeting of Shareholders, with a rigorous basis of the need to increase the capital and with the compliance of the legal provisions related to the field in force;
- the entity will acquire and hold shares in other entities, only after a thorough analysis of their evolution over a period of at least three years and only if the profitability is significantly higher to the monthly interest, and if they start to show a decline over 2% they will be used immediately.

► Use of primary financial instruments - Liabilities:

- the entity will invest only in state bonds if and only if they have a better return than the bank deposits;
- in the hypothetical situation of the default risk, it is advisable to try to make them profitable immediately until the finding of the default by the state.

► Use of derivative financial instruments:

- if the entity is not specialized in derivative instruments transactions it will not conduct such operations;
- if the entity is specialized or if it performs such operations, clear and strict rules on derivative

instruments transactions will have to be developed.

► **Investment decision:**

- an investment decision will be taken only with the consent of the majority of shareholders after making a feasibility study;
- the financing of the investment will be taken into consideration, as far as possible from own sources or sources attracted at the lowest costs.

► **Use of different financing sources:**

- external financing sources will be used only in case the internal resources are not sufficient;
- before attracting a financing source an analysis will be made to identify the best and the cheapest source of financing.

3. Conclusions

From the information presented in this paper, we consider it necessary that at the level of the entities management should be directed towards risk. Especially to implement a financial risk management because its evolution can reflect on profits and even on the very existence of the entity itself.

Consequently, the entrepreneur, in the first phase should become aware of the financial risk that could be considered a threat towards his/her entity and, in the second phase, identify the impact that it could have on the entity, and then propose strategies to reduce it to an acceptable level.

Risk identification is a very important process which does not only mean avoiding risks, but also directing them in the advantage of the entity.

4. References

- Borlea, Sorin. (site accessed on 12 December 2011, 12.00 o'clock). *Analysis of financial performance and of the enterprise risk*<http://www.ccisalaj.ro/proj/modul1.pdf>, pp.9
- Visan D., (2006). *Financial accounting*, vol I, Independența Economică Publishing House, Pitești, pp. 26
- Treasury. H, M, (2004). *Risk management, principles and concepts*, October, pp. 9
- *** The Committee of the Sponsoring Organisations of the Treadway Commission (USA) – COSO;
- *** MacMillan Dictionary of modern economics, Codecs Publishing House, Bucharest, 1999, pp. 408
- *** Institute of Internal Auditors – I.I.A, 1999;
- *** ISA 200 (International Standard on Auditing ISA 200) - The general objectives of an independent auditor and the development of an audit in compliance with the International Standards on Auditing ;

SOVEREIGN CREDIT RATING AND STOCK MARKET CAPITALIZATION IN CENTRAL AND EASTERN EUROPE, 1996 - 2010

DUDIAN Monica

Ph. D. Professor, Department of Economics and Economic Policies, Bucharest University of Economics, Bucharest, Romania, monica.dudian@gmail.com

POPA Raluca Andreea

Teaching assistant/ Ph.D. student, Department of Economics and Economic Policies, Bucharest University of Economics, Bucharest, Romania, popa.raluca.andreea@gmail.com

Abstract: *Sovereign rating influences the corporate credit rating and therefore, the value of corporations on the capital market. The objective of this paper is to verify the premise according to which the degradation of sovereign rating draws in the diminution of stock market capitalization, and its improvement generates the increase of stock market capitalization. In this respect, there has been drawn up a panel type regressive model to quantify the rating impact on the stock market capitalization in Central and Eastern Europe for the period 1996 – 2010. The empirical analysis validates the previous premise.*

Key words: *sovereign rating, market capitalization, Eastern Europe*

JEL classification: G 24

1. Introduction

The sovereign credit rating integrates, through a well-known symbol to the capital market investors, the presumption of ceasing payments and the possibilities of recovery related to the sovereign bonds. The corporate rating is decisively influenced by sovereign rating. Usually a corporation operating on the territory of a country could not hold a better grade than the country itself. If there is accepted the premise that between the sovereign rating and the corporate one there is a direct relationship, then the sovereign rating should influence the price of the bonds of corporations with quotations to the stock exchange. The stock market capitalization indicates the market value of the companies listed within a country and its evolution offers a good image on the investors' perception upon the risk related to the investments on the capital market. The objective of this paper is to verify the premise according to which the degradation of sovereign rating draws in the diminution of stock market capitalization and its improvement generates the increase of stock market capitalization. The plan of the paper is as follows. The next section summarizes the reference literature, the third part brings in the methodology, and the fourth section comprises the empirical analysis. Following this analysis, the main conclusion in the last part of the paper is that the sovereign rating is counter correlated with the stock market capitalization into the Central and Eastern Europe.

2. Literature review

There exists a large body of literature analyzing the impact of credit rating announcements on stock markets. Though, the studies do not reach a consensus on the informational value of the credit rating. One perspective argues that credit ratings do not affect the prices on the financial market if the capital market is semi-strong form efficient (Weinstein, 1977, Pinches and Singleton, 1978, Wansley and Claretie, 1985, Gropp and Richards, 2001 cited by Kraüssl, 2003). The opposite points of view, enclosed in this paper, state that ratings synthesize the information upon the credit quality, reduce the informational asymmetry on the capital market and influence the prices on this market. Thus, Hand, Holthausen and Leftwich (1992) suggest that bonds and stocks experience significant negative returns after the announcement of downgrades, but there are no effects for upgrades or positive reviews. Creighton, Gower, and Richards (2007) realized an event study on the Australian financial markets, using data from Moody's and Standard & Poor's for the period January 1990 - July 2003. They put in evidence *a negative relationship between the prices of corporate debt and equity and corporate ratings (security prices' rising after upgrades and decreasing after downgrades)* but the magnitude of the reaction is small. Moreover, the results are more significant in terms of statistics for bonds yields than for equity prices. Beckmann and Jin (undated) on a sample of 322 rating events related to Real Estate Investment Trusts

preferred stock for 1999 – 2009 periods demonstrated “that there is negative abnormal return around rating downgrades and positive abnormal return around rating upgrades”.

On the whole of the papers studying the rating impact on the capital market, those focused upon sovereign rating are minority. Thus, Setty and Dodd (2003) study the conduct of the three big rating agencies, the models of assessing their credit risk, the rating market, the informational value of it for the orientation of the capital flows, the impact of ratings into the national economies and the implications of the rating models within the financial policy planning. The authors conclude that rating is affecting the capital movements and the interest margins, and that is why the public policies should stimulate their accuracy increase.

Pukthuanthong-Le, Elayan, and Rose (2007) applied the event study methodology to study the impact of sovereign rating modifications (both local and foreign currency rating, on short and long term, issue by Moody’s and Standard & Poor’s) upon debt and equity markets on a sample of 34 countries worldwide, during 1990 – 2000. They concluded *that there was a significant negative reaction of both markets to the rating degradation* and only the bond market react significantly to upgrade. Ferreira and Gama (2007) on a sample of emerging and developed countries, for the period July 1989 – December 2003, found evidence that *Standard & Poor’s sovereign rating downgrade or worsened outlook in one country has negative impact on stock markets of other countries* (it is associated with a negative effect on stock market prices relative to the US). Christopher, Kim and Wu (2012), using historical S&P long-term sovereign ratings and outlook assessments for both local and foreign currency denominated debt, found that *downgrades determine the reassignment of financial capital against the affected markets*, whereas upgrades and outlook improvements from a certain country determine higher returns both on the financial market of that country and the markets from the region where the country is situated.

Kräussl (2003) elaborates in his study an index of speculative market pressure consisting of daily changes in the nominal exchange rate, daily changes of the short-term interest rate, and daily changes in the major national stock market index, as a measure of financial market crises:

$$SMP_{it} = a_1 e_{it} + a_2 r_{it} + a_3 s_{it}$$

Where e_{it} is the first difference of the nominal exchange rate, that is the price of one US dollar in country i ’s currency at time t , r_{it} is the first difference of the domestic short-term interest rate and s_{it} is the first difference of the domestic main stock market index (multiplied by -1 to capture the negative relationship between sovereign rating and stock market index). The weights assigned to these three factors are a_1 , a_2 , and a_3 .

The event study performed by Kräussl (2003) on a sample of 28 emergent economies, for the period 1st of January 1997 – 31st of December 2000, shows that *SMP rises in the case of sovereign credit rating downgrades and the sovereign credit rating upgrades have a lower impact upon the financial market*.

Brooks et al. (2004) have performed an event study related to the aggregate stock market impact of sovereign rating changes for all the countries assessed by the rating agencies during 1st of January 1973 – 31st of July 2001. They considered sovereign foreign currency ratings issued by four rating agencies: Standard & Poors, Moody’s, Thomson and Fitch and local currency ratings issued by Standard & Poor’s. The authors investigated the impact of rating modification upon daily market percentage returns denominated in both US dollars and domestic currencies, using the MSCI World Index as proxy for a world benchmark return. Their main conclusion is that *“upgrades do not have a great wealth impact, while downgrades have a negative wealth impact”*. Moreover, Brooks et al. (2004) show that the ratings issued by Standard & Poor’s and Fitch have a bigger impact than those belonging to the other two agencies.

Li et al. (2008) studied the impact of sovereign rating modification upon five countries in Asia (Thailand, Indonesia, Malaysia, the Philippines, and Korea) during January 1990 – December 2003, period comprising the core or the Asiatic crisis (1997-1998). They took into consideration both long-term foreign currency sovereign credit ratings, and outlook changes. The authors built a dynamic panel regression equation in order to assess both the impact of changes in U.S. stock returns and the impact of modification of a country rating upon the stock returns of the referred country. *The influence of sovereign rating modification upon stock returns was found as statistically significant*, both for the entire period, and the crisis period. In addition, the study applied by Li et al. (2008) confirms the contagion effect determined by the prior mentioned studies within this section.

The current paper is different from the previous studies in various aspects. First of all it is used a simplified model, the panel type regressive model, to evaluate the impact of rating modifications,

including the outlook modifications, upon the stock market capitalization from Central and Eastern Europe. Secondly, it is studied the impact of rating modifications upon stock market capitalization on the whole (as % of GDP), and not on stock returns. Under its simplicity, the study confirms the negative relationship between rating and the stock market capitalization.

3. Methodology

The statistic data related to sovereign rating have been taken from the Fitch Ratings web-site, and those related to the stock market capitalization, from the World Bank web-site (see Annex 1). In order to perform our empirical analysis we convert the letter-long-term foreign currency rating from Fitch into a numerical equivalent as it is shown in table 1.

Table 1: Ratings: conversion from letter to numeric scale

Fitch ratings	Outlook	Numeric grade	Fitch ratings	Outlook	Numeric grade
AAA	Positive	0	BB-	Positive	180
	Stable	5		Stable	185
	Negative	10		Negative	190
AA+	Positive	15	B+	Positive	195
	Stable	20		Stable	200
	Negative	25		Negative	205
AA	Positive	30	B	Positive	210
	Stable	35		Stable	215
	Negative	40		Negative	220
AA-	Positive	45	B-	Positive	225
	Stable	50		Stable	230
	Negative	55		Negative	235
A+	Positive	60	CCC+	Positive	240
	Stable	65		Stable	245
	Negative	70		Negative	250
A	Positive	75	CCC	Positive	255
	Stable	80		Stable	260
	Negative	85		Negative	265
A-	Positive	90	CCC-	Positive	270
	Stable	95		Stable	275
	Negative	100		Negative	280
BBB+	Positive	105	CC	Positive	285
	Stable	110		Stable	290
	Negative	115		Negative	295
BBB	Positive	120	C	Positive	300
	Stable	125		Stable	305
	Negative	130		Negative	310
BBB-	Positive	135	DDD	Positive	315
	Stable	140		Stable	320
	Negative	145		Negative	325
BB+	Positive	150	DD	Positive	330
	Stable	155		Stable	335
	Negative	160		Negative	340
BB	Positive	165	D	Positive	345
	Stable	170		Stable	350
	Negative	175		Negative	355

Source: Fitch Ratings, authors' scale

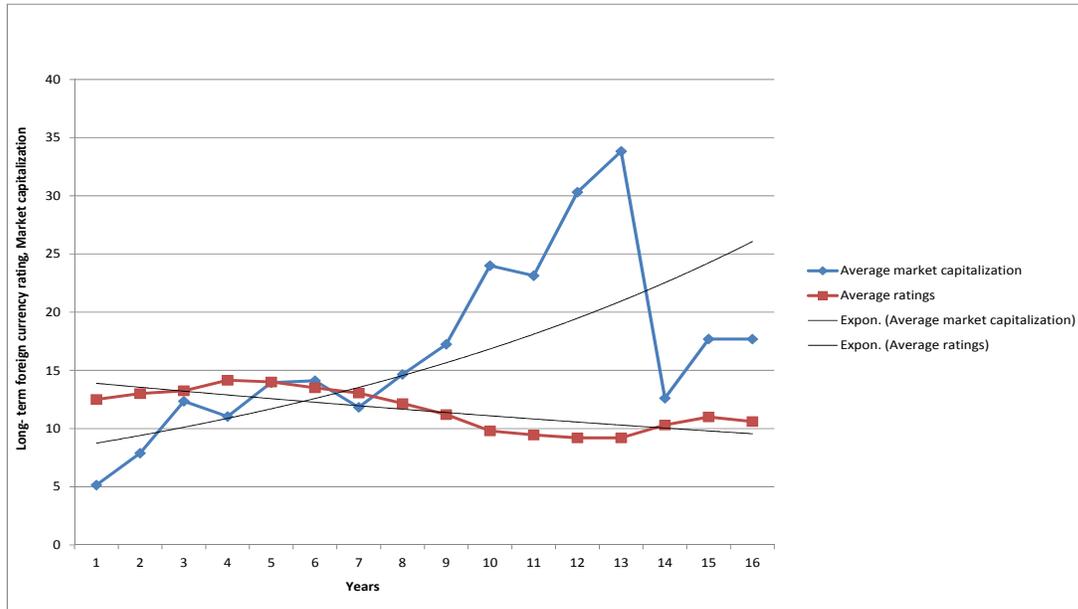
There was calculated an average annual rating as the simple arithmetic mean of ratings registered during the year (January – December). For stock market capitalization there were used the annual data available to the World Bank on market capitalization of listed companies (as % of GDP). The reviewed period is 1996-2010, and the analysis method is that of econometrical modeling with the EViews 7.0 program. This software allows the analysis of data in a panel type system, involving a mix of periods and

series of data for different entities. We have performed the analysis on 10 countries: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia with a number of 150 records.

4. Empirical analysis

The development of financial markets in Central and Eastern Europe started after the communism break-down and it grew with the accession to the European Union. The following graph shows the counter relationship between the average stock market capitalization and the average sovereign rating in the analyzed region, as well as the break-down of the stock market capitalization in 2008:

Figure 1: Sovereign credit rating and market capitalization, Central and Eastern Europe, 1994 - 2010



Source: World Bank, Fitch ratings, authors’ working

In the above graph there could be noticed how the stock market capitalization as a percentage within the gross domestic product increased exponentially in Central and Eastern Europe since 1994 and until 2008, with a slight slip during 2000 – 2001, associated with the crisis dot.com within the world economy. During the same period, the sovereign risk grade is lower and lower, indicating a risk on the decrease. Beginning with 2008, the risk increases and the stock market capitalization goes down to less than half of the 2007 level.

We will apply hereinafter the econometrical modeling. The panel type regressive model has the following form:

$$Y_{i,t} = \alpha + \beta_{i,t} \times X_{i,t} + \varepsilon_{i,t} \quad (1)$$

$i=1,10$

where,

- $Y_{i,t}$ – Dependent variable (stock market capitalization);
- α – Free term coefficient;
- β_i – Independent variable coefficients (RATING);
- $X_{i,t}$ – Independent variables;
- $\varepsilon_{i,t}$ – Radom variables;
- i – Number of “sections” on the basis of whom the regression is made – 10 sections (number of Central and Eastern European Union member states);
- t – Period of time (1996-2010)

Data used:

- Stock market capitalization (CAPITALIZATION_STOCK MARKET)

- Annual value of rating for each country (RATING)

The model will quantify the rating impact upon the stock market capitalization. The configuration of the model is:

$$\text{CAPITALIZATION_STOCK MARKET} = \alpha + \beta \times \text{RATING} + \varepsilon_t \quad (2)$$

To perform the analysis we have applied first the Hausman test. The Hausman test is a test which helps us understand one of the two methods of estimation: the one of the fixed effects and the one of random effects. In our case, the Hausman test points out the fact that for the analysis of the relationship stock market - rating the most appropriate estimation method is that of fixed effects.

Table 2 : Hausman test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section and period random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.226472	1	0.6342
Period random	11.994923	1	0.0005
Cross-section and period random	6.136185	1	0.0132

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
RATING	-0.152333	-0.147286	0.000113	0.6342

The results of the reviewed model are the following:

Table 3 : The reviewed model

Sample: 1996 2010
Periods included: 15
Cross-sections included: 10
Total panel (balanced) observations: 150

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RATING	-0.094186	0.035912	-2.622700	0.0098
C	28.58031	4.234726	6.749033	0.0000

Effects Specification

Cross-section fixed (dummy variables)			
Period fixed (dummy variables)			
R-squared	0.705631	Mean dependent var	17.57940
Adjusted R-squared	0.649112	S.D. dependent var	12.03975
S.E. of regression	7.131847	Akaike info criterion	6.918029
Sum squared resid	6357.905	Schwarz criterion	7.419802
Log likelihood	-493.8522	Hannan-Quinn criter.	7.121883
F-statistic	12.48485	Durbin-Watson stat	0.958771
Prob(F-statistic)	0.000000		

Analyzing these results there could be noticed that:

- The estimation satisfies to an acceptable extent the stoutness conditions in terms of the test Durbin-Watson (with reduced autocorrelations between the residual variables). In order to test the autocorrelation of errors we used the Durbin-Watson Test. Through this test there could be detected the autocorrelation of errors of first order estimated through the method of the least squares. The F test checks if there is at least one parameter corresponding to an explanatory non-zero variable. Due to the fact that the level Prob F is close to 0, the model is valid.
- The adjusted R-squared value of 0,70 implies that the informational relevance of the independent variable within the description of the dynamics of the dependent variable is quite a powerful one;
- The model shows a counter correlation between the rating level and the stock market capitalization level for the countries from Central and Eastern Europe

The estimated equation is the following:

$$\text{CAPITALIZATION_STOCK MARKET} = -0.0941858756655 * \text{RATING} + 28.5803076381 + [\text{CX}=\text{F}, \text{PER}=\text{F}] \quad (3)$$

Resulting that to a modification of one unit of the rating value, the stock market capitalization decreases with approximately 0.09 units.

5. Conclusions and discussions

The objective of this research was the examination of the negative relationship between the modification of the sovereign rating and the modification of the market capitalization of listed companies (as % of GDP) from the Central and Eastern European countries. The panel type regressive model used to quantify the correlation between the two variables certifies the counter correlation for the ten countries.

The used research methodology gives an explorer character to the paper, being required additional thorough analyses to verify the obtained result. In the future, we propose performing an event study based on daily data series upon the stock market capitalization and involving the elimination of any contaminating announcements and major confounding events.

6. Acknowledgements

This work was supported by CNCISIS – UEFISCSU, project number PNII – IDEI 1801/2008.

7. References

- Beckmann, K.S.; Jin, C. (undated) *The Impact of REIT Ratings on Stock Price and Shareholder Wealth*. Available at [http://www.umac.mo/fba/irer/papers/forthcoming/IR110704%20Impact_of_REIT_Ratings%20\(Beckmann%20&%20Jin\).pdf](http://www.umac.mo/fba/irer/papers/forthcoming/IR110704%20Impact_of_REIT_Ratings%20(Beckmann%20&%20Jin).pdf).
- Brooks, R.; Faff, R.W.; Hillier, D.; Hillier, J. (2004) *The national market impact of sovereign ratings changes*, Journal of Banking and Finance 28, p. 233–250.
- Calvo, G. A.; Mendoza, E. G. (2000) *Rational Contagion and the Globalization of Securities Markets*, Journal of International Economics, 51 (1), p. 79-113.
- Christopher, R.; Kim, S-J.; Wu, E. (2012) *Do sovereign credit ratings influence regional stock and bond market interdependencies in emerging countries?*, Journal of International Financial Markets, Institutions & Money, doi:10.1016/j.intfin.2012.01.003. Available at <http://www.sciencedirect.com/science/journal/aip/10424431#FCANote>.
- Creighton, A.; Gower, L.; Richards, A.J. (2007) *The impact of rating changes in Australian financial markets*, Pacific-Basin Finance Journal 15, p. 1–17. Available at www.elsevier.com/locate/pacfin.
- Ferreira, M.A.; Gama, P.M. (2007) *Does sovereign debt ratings news spill over to international stock markets?*, Journal of Banking and Finance 31, p. 3162–3182.
- Fitch Ratings (2011), *Sovereign rating history*. Available at www.fitchratings.com.
- Hand, J.; Holthausen, R.; Leftwich, R. (1992) *The effect of bond rating agency announcements on bond and stock prices*, Journal of Finance, 47, p. 733-752.
- Kräussl, R. (2003) *Do Credit Rating Agencies Add to the Dynamics of Emerging Market Crises?*, Center for Financial Studies, Johann Wolfgang Goethe-Universität. Available at http://www.ifk-cfs.de/fileadmin/downloads/publications/wp/03_18.pdf.
- Li, H.; Jeon, B.N.; Cho S-Y.; Chiang, T.C. (2008) *The impact of sovereign rating changes and financial contagion on stock market returns: Evidence from five Asian countries*, Global Finance Journal 19, p. 46–55. Available at www.elsevier.com/locate/gfi.
- Pinches, G.; Singleton, J. (1978) *The adjustment of stock prices to bond rating changes*, Journal of Finance, 33, p. 29-44.
- Pukthuanthong-Le, K.; Elayan, F.; Rose, L.C. (2007) *Equity and debt market responses to sovereign credit rating announcements*, Global Finance Journal 18, p. 47–83.
- Setty, G.; Dodd, R. (2003), *Credit Rating Agencies: Their Impact on Capital Flows to Developing Countries*, Special policy report no.6, Financial Policy Forum. Available at www.financialpolicy.org.
- Wansley, J.W.; Clauretje, T.M. (1985) *The impact of creditwatch placement on equity returns and bond prices*, The Journal of Financial Research 8, p. 31–42.

- Weinstein, M. (1977) *The effect of a rating change announcement on bond price*, Journal of Financial Economics, 5, p. 329–350.
- World Bank (2011) *Data Catalog*. Available at <http://data.worldbank.org/> .

Annex 1: Rating and stock market capitalization in Central and Eastern Europe, 1996 – 2010

Sovereign rating	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Czech Republic	95	110	110	110	110	110	110	95	95	80	80	80	65	65	60
Estonia	na	125	125	125	110	95	95	90	75	75	80	80	100	115	80
Hungary	140	125	125	110	95	95	95	100	100	110	115	110	125	130	145
Latvia	na	na	125	125	125	120	120	110	90	95	95	110	145	160	155
Lithuania	na	155	155	155	155	140	125	120	90	90	80	85	100	130	125
Poland	125	125	110	110	110	110	110	105	110	105	105	95	95	95	95
Romania	185	185	215	230	215	210	185	170	140	140	125	125	160	160	155
Slovakia	140	140	155	155	155	150	135	120	95	80	80	75	65	65	65
Slovenia	95	95	95	80	80	80	75	60	45	45	35	35	35	35	35
Bulgaria	na	na	200	200	195	195	165	150	140	125	125	125	140	145	145
Market capitalization (% GDP)	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Czech Republic	29,15	22,38	19,48	19,60	19,40	15,09	21,11	19,33	28,18	30,79	34,08	42,14	22,61	27,70	22,41
Estonia	na	21,79	9,27	31,36	32,52	23,76	33,18	38,50	51,55	25,14	35,91	28,23	8,29	13,91	12,10
Hungary	11,68	32,75	29,82	33,96	25,10	19,49	19,71	19,84	28,13	29,56	37,18	34,56	11,95	21,97	21,25
Latvia	2,70	5,50	5,77	5,36	7,19	8,38	7,67	10,20	12,03	15,75	13,57	10,82	4,78	7,05	5,21
Lithuania	10,68	16,71	9,54	10,38	13,89	9,86	10,33	18,86	28,66	31,52	33,87	25,92	7,67	12,15	15,59
Poland	5,35	7,72	11,83	17,61	18,26	13,66	14,51	17,14	28,13	30,89	43,63	48,74	17,04	31,41	40,60
Romania	0,16	1,78	2,41	2,45	2,89	5,29	9,95	9,38	15,61	20,81	26,73	26,54	9,96	18,82	20,04
Slovakia	8,00	6,76	3,30	3,54	4,24	5,14	5,50	6,07	7,87	7,17	8,07	8,28	5,16	5,33	4,66
Slovenia	3,16	8,02	11,35	9,84	12,81	13,93	19,97	24,55	28,69	22,09	38,98	61,21	21,54	23,94	19,74
Bulgaria	0,08	0,02	7,60	5,34	4,78	3,64	4,59	8,49	11,09	17,60	31,09	51,75	17,09	14,63	15,25
Souffour															

THE IMPORTANCE OF INVESTMENTS IN EARLY EDUCATION

DUMITRESCU Alexandra

Ph.D. Student, Faculty of Economics/Department of Doctoral School, Lucian Blaga University of Sibiu, Sibiu, România, alexandra_d_c@yahoo.com

CONSTANTINESCU Adrian

Ph.D. Student, Faculty of Economics/Department of Doctoral School, Lucian Blaga University of Sibiu, Sibiu, România, adicon85@yahoo.com

TACHE Ileana

Ph. D. Professor, Faculty of Economics/Department of Doctoral School, Lucian Blaga University of Sibiu, Sibiu, România, ileanatache@unitbv.ro

Abstract: *The early education is analyzed as being the most profitable investment in education (R. Cuhna). “early education supports later learning opportunities. The economic dimension of early education takes into account the fact that the necessary investment for a child to benefit from early education services is rather low when looking at the cost (both economic and social) generated by a child who misses this education level, not necessarily because of the late education start but because of the lack of educational influences at an early age.*

Key words: investment in education, early childhood education, costs of early education.

JEL classification: I 25

1. Introduction

The adoption of the National Education Law no 1/2010 has generated a restructuring of the entire education system by assuming and promoting a new set of strategic directions such as “promoting an education system based on values, creativity, cognition, will and action, fundamental knowledge, competences and abilities for using in the professional field as well as in society” (art. 2). As an integrated endeavor associated with this law there is the educational credo which is formulated as a response to new social, economic and cultural context generated through entering the European Union, in 2007.

Given the present day situation, this vision and the new perspective it generates are well anchored in the Romanian reality and the fundamental changes affecting the society. “Preschool education can take many forms, depending of the convictions of the teachers and of the parents. Given this, a different terminology for *preschool education* can be *early education*, *early care* or *early development* (Preda, V., Breben, S., Gongea, E., Mitrulescu, V. 2009, p.6).

Interferences between various terms used for early education is generated by various analysis, both epistemological as well as practical together with various obtained results. These analysis have lead to the adoption of strategic documents, policies and direction for action in line with the European and international recommendations and practices.

The Organization for Economic Cooperation and Development uses the term *early childhood education and care* while the European documents use *early childhood development* and *early education*. The Romanian policy documents use the terminology *early education* but the most frequent significance of this is referring to the *preschool education*.

Such modification at the legislative level regarding the organizing and functioning of the educational system in Romania have generated a reallocation of resources - financial, human and material – earmarked for the early education services (infant care centers, kindergartens) as well as for the organizing of the “preparation grade” (as an answer to including this pre-1st grade level in the mandatory education requirements).

2. Early education – the costs involved

The early education is analyzed as being *the most profitable investment in education* (R. Cuhna). “early education supports later learning opportunities. The abilities and knowledge developed early are the basis for developing other abilities and knowledge later on and deficiencies at this level generate even greater deficiencies, missed or undervalued learning opportunities” (Curriculum for preschool learning).

The economic dimension of early education takes into account the fact that the necessary investment for a child to benefit from early education services is rather low when looking at the cost (both economic and social) generated by a child who misses this education level, not necessarily because of the late education start but because of the lack of educational influences at an early age. It is because of this that during childhood, the terminology used by education professionals linked to early education includes *early learning* or *early development*.

The nongovernmental organization “Save the Children” (Salvati Copiii) conducted a study entitled “Care and education during early childhood in Romania”. This study shows that in 2010, in Romania, the number of children with ages between 0 and 8 years old is 1.924.456, representing almost 9% of the 21.462.186 inhabitants representing the entire population of Romania. Only 2.5% of the children with ages lower than the preschool level have access to infant care centers. The insufficient number of places in the infant care centers is underlined also by the fact that the number of children in such public care centers (172.932) is greater than the number of actual beds (148.803). The capacity of infant care centers has decreased dramatically, from 76.944 beds in 1990 to 19.718 beds in 2001 and reaching 14.880 in 2010. After the first 9 months of 2011, 8.203 children with ages below 3 years old were suffering of malnutrition and were taken into account by doctors. This age segment (0-3 years) represents 72% of the entire population suffering from malnutrition in Romania.

During the 2009 – 2010 school year, the rate of “absorption” in the preschool educational system has been of 78,4%. In the same time, the Europe 2020 strategy sets as an objective at least 95% of children with ages between 0 and 4 years old to be included in early education systems. In 2010, 26,772 children with ages between 7 and 8 years old (above 6,4%) were outside the education system.

At European level, the average of the GDP percentage allocated to expenditures with families and their children is around 2,02 % whereas in Romania the same expenditures reach just 1,4% of the GDP.

The same organization mentions in the study titled “The costs of free education – research regarding the hidden costs of education”(2011) that Romania is the country which allocates the smallest amount per pupil in the entire European Union. The global cost per pupil in Romania has been evaluated to 1,5 thousand Euro in 2006. In the same year, the average in the European Union has been of 5,7 thousands Euro. The Romanian level of expenditures is lower than Bulgaria (2,1) and considerably lower than western countries such as France (6,7), Italy (6,8), Spain (7,1), Sweden (7.4), Belgium (7,5), the Netherlands (8,3) or Luxemburg(14,0).

At international level, the first “Starting Strong” report issued by the OECD in 2001 underlines the motivation to invest in education and especially in ECEC – Early Childhood Education and Care. Some of the elements mentioned in the report are embodied in cultural and social convictions about children, the role of the family and of the governmental authorities, in the tradition of early education, etc.

In many countries, early education and care is provided both by public and private organizations and is seen as a complementary contribution to the role of the family in the early development of children. Also, in many countries, there is an effort to switch from a “here and now” approach to a different approach which has the future adult as the focus element.

The 2006 second “Starting Strong” report issued by the OECD proposes 10 strategic directions for the public policies regarding the development and early education of children: participation in social contexts for the early development of children, having as central elements of ECEC the wellbeing, early education and early development by taking into account the natural rhythm for learning of the child, creating the public structures and institutions in order to ensure quality as well as accountability for the education system, developing, together with all relevant stakeholders of curricular standards for all early education services, forecasting and earmarking the necessary public funding for early education in order to provide the covering of pedagogical purposes, reduction of poverty and of social exclusion through fiscal and social and labor policies, increasing available resources for programmes dedicated to children taking into account the right to education, encouraging the involvement of families and communities in services dedicated to early education, improving work environment and adult learning opportunities for people working in early education, providing enough freedom, financing and support for serviced dedicated to early childhood, stimulating ECEC services which support broader learning opportunities, active citizenship and democracy.

The same report underlines the recommendations of the 1st Starting Strong report in 2001 regarding early education service and ensuring equality as well as the continuity between the early education system and the regular education. Such services should be recognized in the same manner as the mandatory education is, as a public resource and an important component of the educational process.

All children should have access to early education before the mandatory education begins. Besides this, there is a recommendation for a more integrated approach of education, both in early education as well as in the mandatory level, with the recognition of the contribution of early education to the development of prerequisites and positive attitudes for later learning. Increased attention should be given to transition of the children towards school by focusing on creating the links between the administrative systems, teachers education and creating complementary curriculums in both educational systems.

The recommendations formulated by the two above mentioned reports represent an integrated vision regarding the role of early education for the later development of each child as well as a critical view upon the relationships between early education services and mandatory education. All strategic planning documents in the field of education underline the importance of covering preschool education curriculum before entering the mandatory education systems.

As for the Romanian education system, the main obstacle is represented by the fact that preschool education (as the sum of all services a child can benefit before the mandatory education stage) is not defined and regarded as mandatory by the law. Even if the National Education Law introduces the concept of early education that the child can benefit before school education, it does not make this stage mandatory.

Coming back to the analysis of strategic European document, in 2011 there have been two communications of the European Commission which target directly early education of children. One such document - *“Education and care for preschool children: let’s give all our children the best education for tomorrow’s world”*, Communication of the European Commission, Brussels, 17th of February 2011, COM (2011) - says: “Education and Care for Preschool Children represents the main base for success in learning all through life, for social integration, for personal development and later on for professional insertion. Being complementary to the fundamental role of the family, education and care for preschool children have an important and sustainable impact which cannot be achieved through later measures. The first experiences of the children lay at the base of their entire later education. If there is a solid base developed in the first years, later education is more efficient and has all the prerequisites to last the entire active lifetime, thus reducing the risk for school abandonment, increasing education efficiency and lowering social costs generated by waste of talents as well as public expenditures in the social, healthcare and even judicial sector.

The 2nd communication – *“Council’s conclusion regarding education and care for preschool children: let’s give all our children the best education for tomorrow’s world”* (2011/C175/03), Official Journal of the European Union 15th of June 2011 – mentions that “high quality education and care for preschool children provides a wide range of advantages in the short and long run, both for the individual as for the society. By being complementary to the main role of the family, education and care for preschool children represents the basis for language development, success in learning throughout the entire lifetime, social integration, personal development and the ability for insertion in the labor market”.

Between the two levels of analysis, the international and the European one, there are similarities and complementarities by underlining the role of early education for the later development of each individual, the role of the family and of the entire community in development, learning and early education of preschool children.

3. Early education in the context of Structural and Cohesion Funds

One of the programmes where preuniversity education level is eligible (and where preschool activities for the ISCED 0 level can be developed) is the Sectorial Operational Programme for the Development of Human Resources. A second programme worth mentioning is the Sectorial Operational Programme for the Development of the Administrative Capacity targeted at local public authorities.

The Development of Human Resources SOP (Sectorial Operational Programme) sets priority axis and major intervention area for Romania in the field of human resources development with the support of the Social European Fund within the Convergence Objective for 2007 – 2013.

The programme has been developed in the framework of the National development Plan 2007 – 2013 based on the priorities of the National Strategic Reference Framework. The human resources development programme is an important instrument for supporting economic development and structural changes in the Romanian society. Furthermore, investments in human capital will provide a high degree of sustainability for the increase of productivity in the long run. A well qualified labor force, with a high degree of education, having the capacity to adapt to new technologies and ever changing markets is essential for a dynamic and competitive economy. Romania will promote active policies on the labor

market in order to increase adaptability and the flexicurity of the labor force. A higher degree of participation in the labor market is expected as a base for the development of a economy based on knowledge(www.fseromania.ro).

Strategic documents have underlined the needs and action directives by emphasizing the following elements:

- The expected decrease in school population with up to 20% by 2013 (as compared to 2005) will generate a wide range of effects on the school network and the recruitment of teachers. This demographic trend will lead to a surplus of teaching staff and implicitly to a need for reduction of teaching staff with up to 10% in the entire initial education system. (Sectorial Operational Programme for the Development of Human Resources – adopted by the European Commission C (2007) 5811/22.11.2007, chapter „Human resources in education”;
- Investments are needed for modernizing education and professional training, especially regarding early/preschool education, the technical and professional education, university education in the contest of the “Bologna” process (especially doctoral studies programmes). The modernization of the education and professional training system will be supported through an adequate legal framework and will ensure the general premises for providing competences and aptitudes requested by the labor market. The capacity of the education system and professional training to respond to changes in the labor market and to ensure the requested level of quality depend, essentially, by the quality and the level of training of the human resources in the education and professional training sectors (National Reform Programme 2007 -2010, Improving the quality of Human Resources);
- Human resources working in the education sector represent 4,32% of the total active population of Romania. Teachers represent 72,2% of the total number of employees in education, with the highest percentage being registered in the primary and secondary levels (80,77%) and the lowest percentage in the university level (54,62%). More than a third of the teachers work in rural communities (35,66%) in 2004-2005, very closet o the level registered in 2000 (34,68%). In the primary and secondary level, the number of teachers in the rural communities is higher than those working in the urban environment. This situation can be explained by taking into account the structure of the school network. In the case of the preschool education, the number of teachers in rural communities is lower than those in the urban communities (National Development Plan 2007 – 2013).

Before the Human Resources Development Programme, two major projects regarding early educations have been implemented at national level. Their objectives aimed at improving the infrastructure as well as the training of teaching staff.

The Project for the Reform of Early Education (PREE) has been a national wide project co financed by the Romanian Government and the Council of Europe Development Bank, with a value of 105 mil. Euro and has been implemented between 2007 and 2011. The main objective of the project for the Reform of Early Education has been to improve the quality of the early education infrastructure and to respond to concrete needs of children by ensuring improved services which will provide a favorable environment for reaching the maximum potential of every child, in accordance with international standards for early education.

The project aims to:

- Improve early education infrastructure destined to children between 3 and 6/7 years old through the rehabilitation of educational buildings
- Improve quality of education at preschool level by training the teaching staff and providing appropriate didactic materials
- Increase the efficiency of the educational system by setting up Centers for Resources in Education as well as by developing the educational management system in the Ministry dor Education, Research and Youth.

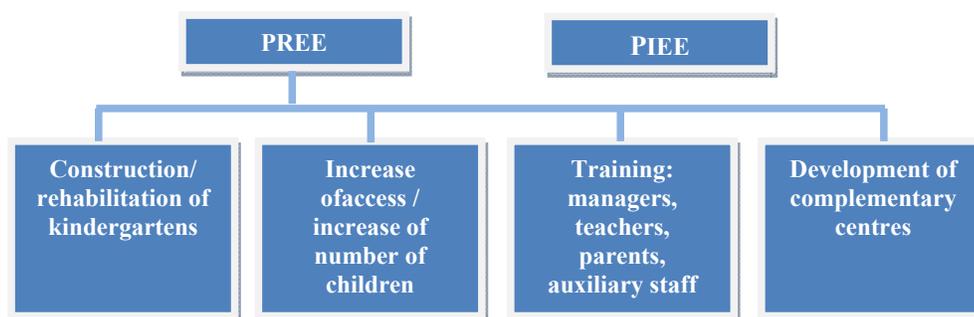
The Project for Inclusive Early Education (PIEE), financed by the World Bank (6,1 mil Euro) and the Romanian Government (1,7 mil Euro) is a part of the Social Inclusion Programme which has been implemented between 2007 and 2011.

The project aims to:

- Increase access to early education for children between the ages of 3 and 6 and creating educational opportunities for children between the ages of 0 and 3 years old, including children belonging to socially excluded groups, such as the roma community;

- Improving quality of early education by improving the curriculum, the training of teaching staff and the development of social, cognitive, emotional and development standards;
- Ensuring equal access to children belonging to socially excluded and vulnerable groups (i.e. children with special needs, children from economically vulnerable families,) to a high quality education;
- Improving the efficiency of the educational system through the introduction of alternative educational opportunities for children living in isolated rural areas.

Figure 1: Common elements PREE și PIEE



As regarding to the projects dedicated to early education developed in the framework of the Human Resources Development Programme, their number is relatively low when compared to the needs identified in the early education sector. Out of all the submitted, approved and implemented applications, only the following projects have been identified:

- “Early education – first step towards a free, harmonious personal development” – priority axis 1 (Education and training as a support for economic growth and for the development of a knowledge based society), 3rd major area of intervention (development of human resources in education and training), ref. no. POSDRU/19/1.3/G/27639. The eligible value of the project is 1.024.830 RON. The main objective of the project is to ensure the prerequisites for a high quality preschool education through the training of teachers and school managers in the area of inclusive education. The results of the project have been: 567 preschool teachers trained in the area of early inclusive education, 25 kindergarten managers trained in the area of inclusive education, 50 school principals trained in the area of inclusive education, 50 auxiliary staff trained in the area on inclusive education, development of early education service, creation of early education opportunities in the local communities by increasing the children rate of participation in education as a prerequisite for reduction of school abandonment, focus of the preschool teaching community toward programmes of inclusive education;
- The “Preschool education for all” project, priority axis 1 (Education and training as a support for economic growth and for the development of a knowledge based society), 3rd major area of intervention (development of human resources in education and training), ref. no. POSDRU/19/1.3/G/22401. The eligible value of the project is 1 293 516,40 RON. The project aim has been to improve the competences of teaching staff at preschool level in order to match the educational offer with the age particularities of children between 2 and 6/7 years old and the increase of interest among teaching staff for lifelong learning programmes through face to face activities, tutoring and counseling, workshops, exchange of experiences, etc. In the framework of the project there have been realized training courses on subjects such as the social-emotional development of the infant up to 6/7 years old, interpersonal communication, interactive methods for teaching-learning, integration of children with special educational needs, use of IT in the kindergarten. Also, a team of 25 preschool teachers/trainers has been developed as a result of participating in a training programme approved by the National Center for Adult Professional Training. The experience gained in this project and all the best practice examples will be made available to the general public through a methodological guide with video support, thematic promotional publications, etc.
- “Perspectives of the training of early education and primary school specialists at a higher level through masters education programmes” (PERFORMER) - priority axis 1 (Education and training

as a support for economic growth and for the development of a knowledge based society), 2nd major area of intervention (quality in the university education), ref. no. POSDRU/86/1.2/S/62508. The project has a total value of 4.246.210 RON. The project aims to improve the educational offer and to provide an integrated educational package by developing a masters study programme with double specialization for people working in the early education and primary school level, with emphasis on the new European labor market requirements.

4. Conclusions

The early education is analyzed as being the most profitable investment in education (R. Cuhna). “early education supports later learning opportunities. The economic dimension of early education takes into account the fact that the necessary investment for a child to benefit from early education services is rather low when looking at the cost (both economic and social) generated by a child who misses this education level, not necessarily because of the late education start but because of the lack of educational influences at an early age.

Given the analysis of policy documents relating to investments and costs of early education, the need for this investment appears as an axiom. International, European and national importance of these costs as necessary is emphasized by various studies and by taking long courses of action. In Romania, the first steps have been made in terms of legislative framework but unfortunately there are several steps necessary budgetary allocations more consistent for success.

5. References

- Commission of the European Communities.(2006). Communication from the Commission, *Adult learning: It is never too late to learn*. Brussels. COM (2006), p. 61.
- Commission of the European Communities.(2007). Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions. *Action Plan on Adult learning: It is always a good time to learn*. Brussels. COM (2007) 558 final.
- Comunicare a Comisiei Europene, *Educația și îngrijirea copiilor preșcolari: să oferim tuturor copiilor noștri cea mai bună pregătire pentru lumea de mâine*. Bruxelles, (17.2.2011), COM(2011),p. 66.
- Fundația Europeană pentru Formare (E.T.F).(2003). Implementarea strategiilor de educație permanentă în Europa: raport asupra progresului înregistrat în urma rezoluției Consiliului din 2002 privind educația permanentă. Țările candidate și în curs de aderare. Bruxelles: Ministerul Educației, Cercetării și Tineretului, *Curriculum pentru educația timpurie a copiilor cu vârsta cuprinsă între naștere și 6/7 ani*. București (2008).
- Jurnalul Oficial al Uniunii Europene, *Consiliului privind educația și îngrijirea copiilor preșcolari: să oferim tuturor copiilor noștri cea mai bună pregătire pentru lumea de mâine*, (2011/C 175/03).
- www.cedefop.europa.eu (The European Centre for Development of Vocational Training-Centrul European pentru Dezvoltarea Formării Profesionale Thessaloniki, Grecia).
- www.etf.europa.eu (The European Training Foundation- Fundația Europeană pentru Formare, Torino - Italy)
- www.edu.ro, www.fonduri-structurale.ro, www.fseromania.ro, www.inforegio.ro

VIEWS REGARDING THE ORGANIZATION OF THE ACTIVITIES RELATED TO THE PREVENTION AND COMBAT AGAINST MONEY LAUNDERING

DUMITRESCU Serju

Ph.D. Student, Faculty of Economics and Business Administration, University of Craiova, Craiova, Romania

AVRAM Marioara

Ph.D. Professor, Faculty of Economics and Business Administration, University of Craiova, Craiova, Romania, marioaraavram@yahoo.com

Abstract: *The present paper tries to render different aspects of money laundering in Romania according to the present legislation. We have tried to identify several aspects related to this issue such as: the sequences of the money laundering process, the entities having reporting obligations, the duties of the persons in charge with the prevention & combat against money laundering, report deadlines, different types of reporting which have to be done to the Money Laundering Department, the contraventions & crimes regularized by the law of money laundering as well as the persons who are responsible with controlling, checking & applying the money laundering law. The case studies presented in the end of the paper lie under the incidence of the law number 656/2002 regarding the prevention & combat against money laundering.*

Key words: money laundering, entities with reporting obligations, the report deadlines, types of reporting, contraventions & crimes

JEL classification: G 19, G 29, M 40, M 41

1. Introduction

The money laundering concept/idea has (got) its origin somewhere between 1919-1932, in a period known under the name of Prohibition when the famous Al Capone & Bugsy Moran have opened laundries in Chicago in order to “wash dirty money” which has been obtained through illegal alcohol trade.

The money laundering notion implies the existence of a previous crime generating dirty money – a primary crime. In other words, money laundering refers to any action that is connected to the money obtained out of that primary crime. All the above things considered, money laundering can also be defined as any action that concerns hiding, dissimulating, possessing, using, investing, moving, keeping, or even property transfer, an action which has the status of a crime according to law. It is important to know that this type of action also refers to the gains obtained through other crimes. (O.N.P.C.S.B, 2010)

Money laundering is a complex process that has several stages in which more entities and persons are involved. These entities and persons which have obtained illegal profits out of a criminal activity, try to transport, transfer and even mix this illegal profit with legitimate funds in order to hide or dissimulate its real nature, its origin, movement or even its property right.

The main purpose of money laundering is to make the funds obtained through an illegal activity look as if they were legal.

2. The stages of money laundering process

Over the years money laundering has been regarded as a complex process, but according to law it has always been considered a crime. Due to its complexity the activity concerning money laundering can be divided as follows:

a) Money placement – at this stage, the person who has gained sums of money out of illegal activities, tries to place them inside the financial banking system. This is done through the effective cash movement in order to remove its illegal source origin. There are several ways in which this can be done:

- divide huge sums of money into smaller ones in order to avoid the transactional report;
- money exchange;
- the replacement of high value banknotes with smaller ones.

b) Stratification – at this stage one or more persons use illegally obtained money in several financial banking transactions in order to prevent any possible connection between the sum of money and its illicit origin/ source operations. At this stage we can mention several operations taking place: successive crediting and debiting in different bank accounts under the name of: “goods advance”, “payment for proforma invoice”, “payment of consulting contracts”. We need to mention that all these

activities concerning the movement of the money are in fact fictitious as they don't justify the economical profile of the client given.

c) Integration- it is the stage when the money is actually introduced in the real economy. What we have here is a reintroduction of the funds obtained through illicit activities in assets such as fixed and mobile goods or estate properties.

3. Romanian legal documents regarding money laundering

Here is a list containing some of the most important Romanian documents regarding money laundering:

- Law nr. 656/2002 regarding the prevention and punitive sanction for money laundering;
- Governmental Decision nr. 1599/2002 that stipulates the regulations for the appropriate organization & functioning of the National Office for the Prevention and Combat against Money Laundering;
- The National Office Decision nr 673/2008 concerning the approval of the work methodology regarding the way in which the reports about cash transactions and the ones regarding the external transfers are made;
- The National Office Decision nr.674/2008 regarding the form and contents of different reports-reports on suspicious transactions, reports with cash transactions, reports on external transfers. Several important institutions such as: The National Bank, The National Commission for the Financial Market, The Commission for Insurance Surveillance, the Commission for the Surveillance of the Private Pensions System have adopted strict regulations, norms & orders in order to establish clear measures for the prevention and combat against money laundering.

According to the stipulations of art.8 Law nr 656/2002 which have been approved & modified by Law nr 238/2011, the physical (non-juristic) & juristic persons who fall under the incidence of Law nr. 656/2002 are:

- credit institutions & Romanian branches of foreign credit institutions;
- financial institutions, as well as Romanian branches of foreign financial institution defined as any entity with or without juristic personality, a different one from the credit institutions under taking activities such as (Art. Nr.18 O.G. 99/2006): credit acceptance; financial leasing; postal services; guarantees emission; activities performed by specialized entities in money exchange; insurance & reinsurances; financial investment services & investment counseling, investment administration, and other types of investment; participation to the emission of bonds on the financial market and other financial instruments; personal transactions or transactions in the name of other persons using :checks, bills payable to order, deposit certificates, currency future contracts, financial options, other instruments based on currency exchange & rate interest, other transferable financial instruments; counseling services regarding capital structure, business strategy and other aspects related to commercial business, merging services as well as services regarding the acquisition & carrying out of other counseling services; portfolios administration & counseling; custody & administration of financial instruments; renting security cassettes;
- private pensions funds administrators in their own interest, for the private pensions funds they administrate, authorized marketing agents within the private pensions system;
- casinos;
- physical & juristic persons who offer bookkeeping & fiscal counseling;
- public notaries, lawyers and other persons who have liberal juridical professions whenever they assist their clients in various activities which involve: to buy or sell fixed goods, shares or elements of the trade fund; to administrate the financial instruments of other goods belonging to their clients; to create or administrate bank accounts; to properly organize the process of creating, administrating and running a commercial firm or other similar structures; when they perform other fiduciary activities or when they represent their clients in any financial operation;
- other entities or suppliers of services for commercial firms;
- others persons involved in the privatization process;
- estate agents;
- associations & foundations;
- other physical or juristic persons who trade goods & services within the limit of 15.000 Euro cash transfer. It is not important if the transaction is realized through one operation or a succession of more operations.

The juristic persons mentioned above will delegate one or more persons to supervise the way in which the money laundering law is rightly put into operation. (Art. No. 14, Law 656/2002) The name, status and the duties of the above mentioned persons will be communicated to the National Office for the Prevention & Combat against Money Laundering.

In the case of other physical or juristic persons who trade goods or services, except for the ones mentioned in the Money Laundering Law it is not necessary to delegate a certain person with prerogatives in the field of money laundering. Anyway, the person belonging to such entities who is suspicious about the existence of some illegal operations involving money laundering (cash operations within the limit of 15.000 Euro) will immediately inform the National Office for the Prevention and Fighting against Money Laundering;

If a physical person, who performs activities for a juristic person with reporting competence according to law number 656/2002, is suspicious about the existence of any intentions regarding money laundering or terrorism, then he/she will inform the person delegated by the entity to supervise the right application of law. This person will analyze the received information and report it to the Office. If it is necessary, the Office can stop the operation for 48 h, or if it is required up to 72 h. A longer extension is accepted only with the approval of the Prosecutor's Office. The Office has to inform the reporting entities about its decision within 24 h .If this doesn't happen within the 24h given then the operation can take place.

In some situations an operation involving money laundering is still carried out with the approval of the person with delegated competence in the field of money laundering. This person decides not to inform the Office at first in order to identify the beneficiary of the given transaction. Still the person mentioned above has to inform the Office immediately (or within 24 h) about the necessity of the performed operation. They also have to mention the reason why they decided not to report before the transaction took place.

If we have a physical person who is practicing a liberal juristic profession for entities with reporting competence in the field of Money Laundering Law- who is aware of the existence of a certain activity involving money laundering, then this person will inform the delegate authorities of the liberal professions who will pass the information to the Office within a period of 3 days.

In a given period of 10 days any cash transactions performed within the limit of 15.000 E (national or foreign currency) as well as external transfers within the limit of 15.000 E will be reported by the persons with reporting competence or other delegated persons seeking for the right abiding of the money laundering law.

Briefly, the Office receives 3 types of reports from the supporting entities (Decision of the Office Committee no. 674/2008):

- suspicious transactions report-suspicious transaction meaning the operation that apparently has no economic or legal purpose and that looks suspicious due to its unusual character as compared to the type of activity performed by the client;
- a report regarding cash operations (with national or foreign currency) performed through one or more related operations within the limit of 15.000 E;
- a report for external transfers (in or form different accounts) also performed within the limit of 15.000 E; the external transfers in a given or from a given bank account refer to the transfers being done across the borders of the country; they may also imply cash payment operations between residents and non residents from Romania.

The Office analyses all the received information and whenever it finds clear evidence of money laundering will it inform the Prosecutor's Office. If there is evidence about using this money to support terrorist action, then the Office will also inform the Romanian Department of Information. (Art. No 6, Law 656/2002)

According to the Regulations nr.1889/2005 of the European Parliament and European Council, any physical person coming in or getting out of the European territory with a sum of money bigger than 10.000 E is forced to declare it the customs. The written declaration is to be signed in front of the custom-house authorities of the state in which the person chooses to come in/go out from the European territory.

In Romania this duty is stipulated in article 156/HG707/2006 for the approval of the Regulations regarding the right application of the Romanian Customs Code. Only a written declaration is accepted in Romania. In other countries the person can declare the sum of money orally or in an electronic system.

According to the money laundering law, every month the Customs National Authority needs to inform the Office about the sums of money which have been declared by the physical persons coming in-getting out from the European territory. We have in mind the sums of money which exceed 10.000E. Whenever the Customs National Authority has any information on a certain institution involved in money laundering activities then it is its duty to inform the Office within 24 h.

4. Penalties received for money laundering

According to the present legislation, there are mentioned a number of penalties for money laundering. Within the given context, a person can receive a **10.000 lei up to 30.000 lei fine** for the following **contraventions**: (Art. No.22 paragraph 1 letter a), Law 656/2002)

- if the person doesn't inform the rightful authorities in charge with the combat against money laundering about the existence of suspicious operations;
- if the person doesn't inform the rightful authorities about those persons who perform suspicious cash operations exceeding the accepted amount 15.000 Euro;
- if the delegated person doesn't inform the Office immediately;
- if the cash operations exceeding 15.000 Euro are not reported within a 10 days time period;
- if the external transfers in/or form different bank accounts exceeding 15.000 Euro are not reported within a 10 days;
- sometimes an operation has been performed in order to trace down the beneficiary of the suspicious activity; in this particular case the transaction has been approved by the reporting entity that needs to inform the Office within 24 h.

Any of the following can be considered **contraventions** and consequently a person can receive a **15.000-50.000 lei fine** if: (Art. No.22 paragraph 1 letter b), Law 656/2002)

- the sum of money hasn't been blocked in the owner's bank account until further action approved by the Office or the Prosecutor's Office;
- the necessary information required by the Office hasn't been sent to the reporting entities within 30 days (from the moment in which the information has been requested);
- the reporting entities haven't taken the necessary measures for the prevention of money laundering, especially when the standard measures haven't been applied so the real beneficiary couldn't be identified.
- correspondent relations have been established between credit institutions and a fictitious bank or another credit institution that allows a fictitious bank use its accounts;
- the reporting entities haven't taken the standard measures in order to better know its clients in the following given situations: to establish business connections; to perform occasional transactions of at least 15.000 Euro no matter if the transaction is performed through one operation or more connected operations; when there are doubts that the given operation implies money laundering or terrorism support. In this case, the aspects such as the applications of standard measures to better know the client or aspects regarding the operations value are not to be considered; the information regarding the client's identification is doubtful; buying or exchanging casino counters with minimum value of 2.000 Euro; operations with new clients are performed; operations performed with already existing clients according to risk; the credit or financial institutions open anonymous accounts and perform different operations though these accounts even if the owner's or beneficiary's identify is not known;
- if supplementary measures for a better knowledge of the client are not applied by the reporting entities in some cases which have a major risk factor regarding money laundering or terrorism support: these supplementary measures are not taken in the case of the persons who are not present when the operation is performed; in case of correspondent relations with the credit institutions from different states which are not EU members or don't belong to the Economic European Space; in case of transactions or business relations with politically exposed persons who are residents in another EU state member or the European Economic Space in a third state;
- the physical or juristic person reporting hasn't preserved a copy of the identify document or identity references for a period of at least 5 years; this copy is to be preserved after a business relation or occasional transaction has been signed and especially when the client's identification is required by law;

- when the reporting entities haven't appointed a person or more in charge with the combat against money laundering; also when these reporting entities haven't established the precise rules and procedures regarding a better knowledge of the client, the way in which to report and preserve the necessary documents for internal control, evaluation and risk management;
- the delegated persons and other persons with reporting competence haven't designed a written document about suspicious transactions and haven't immediately delivered it to the Office;
- the authorities in charge are to be fined if they haven't controlled and checked the right application of the stipulations of law nr.656/2002

According to Law nr.656/2002 the authorities in charge with the combat against money laundering are the following:

a) prudential surveillance authorities for the persons who are exposed to this type of surveillance such as:

- the Romanian National Bank for the credit institutions and non banking for the credit institutions registered in the special register;
- the National Commission of the Financial Market for investment firms, firms of investment funds;
- the Commission for Insurance, Surveillance for insurance firms, reinsurance & insurance brokers;
- the Commission for the Surveillance of Private Pensions System, for the ones who administrator the funds of private pensions, authorized marketing agents in the private pensions system;
- the National Union of Public Notaries, for public notary;
- the Romanian National Bar Union, for lawyers;

b) The Financial Guard and other authorities with financial control competence for all the entities except for those who are under prudential surveillance;

c) leading structures of liberal professions for the professions they coordinate;

The following can be considered money laundering **offences** (for which a person can receive a **3-12 years sentence in prison**): (Art. No.23, Law no. 656/2002)

- goods exchange or transfer even if the person knows these goods are the out come of an infringement of law; the goods exchange is realized in order to hide their illicit origin or to help the person who has committed the crime to get anyway;
- hiding or dissimulating any kind of information regarding the true origin of certain goods even if the person knows they are the outcome of some illicit action;
- if the person gets, holds or even uses certain goods knowing that they are the outcome of some illicit action.

The Penal Code stipulates the special confiscation of goods in case of money laundering offences or any other action that supports terrorism.

Under cover investigators can also be used to collect information about a certain offence & its doers.

5. Study Cases falling under the incidence of Law nr. 656/2002

Considering the cases monitored by the Financial Guard, there have been many situations which lie under the incidence of Law nr.656/2002. Here is a schema that has been frequently applied in Romania:

- commercial firms owned by gypsies usually fictitiously purchase goods or invoice based services from the so called "phantom" commercial societies- i.e. they don't have a declared address, they are not registered at the National Office of Trade Register or their administrators can't be reached;
- cash payment for the suppliers is preferred even if the amount of money accepted according to OG 15/1996 for daily transactions towards juristic persons is usually exceeded (according to law only 5.000 lei/juristic person/day is accepted); (Art. No 5 paragraph (2) letter c), O.G. 15/1996)
- the goods and services fictitiously purchased are usually traded using a fictitious invoice from a real commercial society. There are two situations here:
- in the first situation the goods and services are not delivered by the supplier. On the other hand the beneficiary doesn't have them either, because the main reason for the given transactions is to offer the beneficiary the possibility to diminish his fiscal obligations/duties and withdraw certain amounts of money out of his society;

- in the second situation the goods and services are not delivered by the supplier, but the beneficiary needs documents to attest the origin of his goods. Although the services have been rendered to the beneficiary by another supplier on the “black market”, the owner (i.e. the beneficiary) still doesn't have the right documents to prove the case;
- the payment of the commercial firms which have issued fake invoices is done through bank transfer by the beneficiary of “the documents”. The commercial firms issuing such invoices are usually owned by gypsies;
- in order to pick up the sums of money obtained out of unperformed operations & to enable the firm, that is the beneficiary of the documents, to take its money back, the supplier finds a solution. The firm supplying fake invoices declares to the bank that the sums of money which are to be withdrawn are for different operations done with physical persons: money for the acquisition of rusted iron, copper, wages, usually operations which do not fall under the incidence of OG 15/1996. Later, “the beneficiary of the papers” gets its money back after paying a “2-5 % commission out the operations value” to the supplier;

There are several fiscal implications coming out of these operations:

- the beneficiary takes advantage of diminished VAT;
- the beneficiary also takes advantage of a diminished profit tax;
- apparently certain sums of money are legally withdrawn from the beneficiary firm by different associates or administrators.

The fictitious character of the operations resides in:

- the firms which supply “papers /documents” don't have any means of transport or inventory objects;
- they don't have hired staff;
- in any reporting period these firms are registered with losses in order not to pay the profit tax;
- these firms are registered as paying VAT, but at the end of the reporting period their VAT is to be refunded by the state;
- the associates invest huge amounts of money in these firms, but they can't prove the origin of their money.

6. Conclusions

In conclusion, we consider that Law 656/2002 for the preventions and against money laundering is a first class document with a national coverage.

Starting with the 1st of January 2011 a new article (art.79¹ OUG no.117/2010-modified and completed) of Law nr.571/2003 has been issued. This article stipulates that all sums of money having an unidentified origin are to be 16% taxed.

We consider that law no.656/2002 associated with this newly issued article of Law. No. 571/2003 will offer a clearer perspective on the Romanian economy.

7. References

- Avram, C.D.; Avram, V. (2009) *The Management of Labour Market's Flexicurity in the Bank Sector*, Agora International Journal of Economical Sciences, no. 3;
- Avram, C.D.; Avram, V. (2010) *Several considerations regarding the application of the labour flexicurity principles in Romania*, 5th WSEAS International Conference on Economy and Management Transformation (EMT '10), Volume I;
- Avram, M., Avram, A. (2012) *Legislatie contabila si fiscala*, Editura Universitaria, Craiova;
- Briciu, S. (2006) *Contabilitate manageriala*, Ed. Economica, Bucuresti;
- Bunget, O.C., Dumitrescu, A.C. (2011) *Gestionarea crizei economico-financiare la nivelul IMM-urilor*, *Revista Contabilitatea expertiza si auditul afacerilor*, Nr.1;
- Criveanu, M. (2010) *Contabilitate publica*, Ed. Universitaria, Craiova;
- Danescu, T., Todea, N., Prozan, M., Danescu, A.C. (2011) *Studiu privind armonizarea rezultatului contabil cu rezultatul fiscal*, *Revista Audit Financiar Nr.2*;
- Domnisoru, S. (2009) *Audit si comunicare financiara*, Ed. Universitaria, Craiova;
- Iacob, C. (2009) *Contabilitate de Gestiuone*, Ed. Universitaria, Craiova;
- Talpos, I., Avram, A (2011) *Current trends in the mix of fiscal and budgetary policies*, Proceedings on the 1.st Conference on tourism and economic development;

- ***O.N.P.C.S.B (2010) Manual regarding the indicators and the approach based on risk of suspicious transactions;
- ***The International Financial Action Group (2010) *The Analysis of the Global Threats Regarding Money Laundering and Terrorism Support*, Paris;
- ***The Instructions of the European Parliament and European Council regarding the use of the financial system in order to prevent money laundering and terrorism support, *EU Official Journal nr.L309/2005*;
- ***Law 656/2002, for the prevention and combat against money laundering, Official Monitor no. 904/2002;
- ***Law nr. 535/2004 for the prevention and combat against money laundering, Official Monitor no.1161/2004;
- ***O.G. 99/2006, regarding credit institutions and capital suitability, Official Monitor 1027/2006;
- ***O.G. 15/1996, concerning the reinforcement of the financial discipline, Official Monitor no. 24/1996;
- ***Decision of the Office Committee no. 674/2008, Official Monitor no. 451/2008;
- ***magazine Financial Audit no.9/2011;
- ***www.onpcsb.ro.

GLOBALIZATION OF FINANCIAL AND AUDITING SERVICES- FINANCIAL IMPLICATIONS FOR ROMANIAN COMPANIES

DUȚESCU Adriana

Ph.D. Professor, Faculty of Accounting & Management of Information Systems, Department of Accounting, Audit, Analysis and Management Information Systems, Academy of Economic Studies of Bucharest, Romania, e-mail: adriana.dutescu@bsm-mba.ro

SAHLIAN Daniela

Assistant professor, Ph.D., Faculty of Accounting & Management of Information Systems, Department of Accounting, Audit, Analysis and Management Information Systems, Academy of Economic Studies of Bucharest, Romania, e-mail: daniela.sahljan@gmail.com

Abstract: *The scope of this paper is to provide insights into the financial globalization phenomenon that we are currently witnessing. We shall focus on presenting the results of a study performed on a set of Romanian companies, with the intention to identify the main influencing factors and the costs of financial globalization in Romania.*

The study performed on the Romanian companies will approach different signs of globalization, such as international stock exchange listing, the obtaining of foreign loans or the engaging in foreign financial investments, the degree of foreign investors control of the company capital, the preparation of reports under IFRS/GAAP.

Key words: globalisation, financial reporting, financial auditing, research

JEL classification: M 4

1. Introduction

The classical **financial scandals** of Parmalat, Enron or WorldCom have also stressed the loopholes of existing financial regulation and the limitations of audits. Creative accounting practices, together with old-fashioned fraud, put a supplementary pressure on the performance of accountants and auditors, and makes the investors less trustful of the accuracy and reliability of financial statements.

But this is not enough to stop the **globalization of financial and audit services**. Ultimately, the battle will be taking place between the need to have a one-size-fits-all accounting system and the distinctive aspects of local cultures. The vectors of change come from the private sector – the multinationals. Of utmost importance here are the Big 4 Companies, who offer financial and auditing services in most world countries.

The current research had two main objectives: 1) to identify the “globalisation signs” within the financial reporting of Romanian companies and 2) to determine the globalisation cost of financial reporting and financial activity

2. Body of Paper

The **changes** that are taking place on the global market – in terms of adopted reporting frameworks, international listings, or borrowings made abroad – are starting to be **felt in Romania** as well. This process is largely favored by **Romania’s accession to the EU** on January 1st 2007. The particular details will be discussed in parallel with the findings of a survey of Romanian companies concerning the globalization of financial and auditing services.

2.1. Survey of Romanian Companies

In order to assess the **influence of globalization for the Romanian companies**, a survey has been organised and completed with data coming from **60 respondents**. The objectives of the study, accompanied by steps, methodology and findings, are provided in the following sections.

The following items have been considered useful in determining the **cost of globalization**:

- The evolution of the number of employees in the finance-accounting department, as compared to the overall evolution of employees in the company
- The evolution of the average salary in the finance-accounting department, as compared to the overall evolution of the salary in the company

- The evolution of the training budget and training costs for the employees in the financial-accounting department
- The evolution of the acquisition cost for integrated reporting software programs
- The costs related to the changes in the reporting requirements (for example, the change from OMF 1827/2003 and 1775/2004 to OMF 1752/2005).

2.1.1. Population and Sample

According to the the National Institute for Statistics, at the end of 2006, there were around **531.000 active** Romanian companies. Of these, there are **98 companies listed** at the Bucharest Stock Exchange (BVB), and **2.289 listed** on the RASDAQ stock market. According to the Business Annuary of Romania compiled by Ziarul Financiar, there are around **750 companies** that are among the **leaders of 80 market segments**, and, with some notable exceptions (Romtelecom, BRD), most of them are also listed. Out of these 750 companies, there are only **60 having public financial reports** (online), and only a number of **35 cover** with their statements **the 2004-2006 period**:

Table 1: Number of Romanian Companies According to Various Criteria

Level of Detail	Number of Companies	Percentage of Total
Active Romanian Companies	531.000	100,0000%
Listed Romanian Companies	2.387	0,4495%
Leaders of Market Segments	750	0,1412%
Having Public Financial Reports	60	0,0113%
Having Public Financial Reports Covering 2004-2006	35	0,0066%

The population was considered to be comprised of the companies that are included in the Ziarul Financiar Top and/or have public financial reports. The total is of 750 companies. The analyzed sample was comprised of all the companies having at least one public yearly financial report. The size of the sample is 60 companies. The size of the sample was based on the availability of data, and not on a previously determined level.

According to the Taro Jamane (Şerban, 2004, p. 78) expression, this sample guarantees the representativity of the population with an error of 12.4%:

$$n = \frac{N}{1 + N \cdot e^2} = \frac{750}{1 + 750 \cdot 0,124^2} = 60$$

2.1.2. Data Gathering

Based on the objectives of the study, a **questionnaire** was designed in order to be handed out to the companies willing to participate (see Appendix no. 1). The **difficulties** in obtaining **direct responses** from the companies, and the strict **confidentiality policies** of their auditors (notably KPMG), have lead to the **search of already available information** on the companies. More than **1.500 company websites** have been accessed in the search of annual reports, financial reports, reports made to the Romanian National Securities Commission (Comisia Națională a Valorilor Mobiliare – CNVM) and any other piece of information pertaining to the study.

The data was entered in a modified **Excel version of the questionnaire**, for all the 60 participants, and centralized in a separate sheet. This sheet was exported afterwards into **SPSS**, with the help of which the **data analysis** was performed.

2.2. Findings

Before the actual analysis of the questionnaire variables, here is some information on the **nature of the companies**, their **listing** on a stock exchange, the **source of information** on them and the **quality** of this source. Out of the **seven economic sectors** disclosed in accordance with Ziarul Financiar, 62% of the companies inquired belong to the **Industry** sector, 15% to **Energy**, 7% to **Constructions**, 7% to **Transportation & Trade**, 5% to **Services**, 3% to **FMCG** and 2% to **IT&C**.

Table 2: Information on the Respondents to the Questionnaire

Allegation	True	False
The juridical form of the Company is SA	96,7%	3,3%
The Company is part of the Ziarul Financiar Top	73,3%	26,7%
The Company is listed on a Romanian stock exchange	78,3%	21,7%
The Company has its own web page	96,7%	3,3%
The Company has financial reports on web page	75,0%	25,0%
More data from other sources were needed	90,0%	10,0%
The reports are available in Romanian only	88,3%	11,7%

Based on the information made available by the Company, **only in 10% of the cases** (6 respondents) **was the disclosure** provided by the Company's web site **sufficient** to allow the analysis of the Company for the period 2004-2006. A number of 14 companies (23,33% out of the entire population), although **listed on a Romanian stock exchange**, do **not have their reports available** on their own web page. For these companies, the site of CNVM was able to provide the information, at least partially.

For no more than **56%** of the companies (34 respondents), using all available sources, was the information enough to cover the timespan between **2004 and 2006**. In what concerns the format of the reports, only **48,3%** of the respondents disclosed their financial information in **PDF format**. Moreover, only **18,3%** of the total reports contained a **management report** accompanying the statements, and prepared in a more user-friendly manner (with images, graphs, charts etc).

2.2.1. Listing on the Stock Exchange

A number of **47 companies** (78,3%) are **listed on a local stock exchange** (BVB or RASDAQ). Most of them (36 companies) are listed on **Bucharest Stock Exchange** (BVB) and the remainder of 11 on the **RASDAQ Market**. The **year of their listing** varies between 1995 and 2006, with most of them (36 companies) being listed between 1996 and 1998.

An interesting fact for the companies analyzed is that the **potential capitalization** (total capital) of the companies **not listed** on either stock exchange is about **150%** the size of the potential capitalization of the **listed companies**. This is due to the fact that **giants** such as Electrica SA, Automobile Dacia SA and Romtelecom SA are not yet listed.

Table 3: Potential Capitalization of Analyzed Companies, per Category of Listing

Stock Exchange Listing	Potential Capitalization (RON)
BVB	10,897,061,204
RASDAQ	126,942,964
Neither	16,769,646,909
Total	27,793,651,077

It should also be noted that Romania, while having the **highest number of listed companies** in the Central and Eastern Europe area, is **lagging seriously behind in terms of market capitalization** (the value of the shares that are actually tradeable). To give an **example**, the number of listed Romanian companies is almost ten times the number of listed companies in Poland, but the market capitalization in Poland is five times higher than that of Romania. Hungary and the Czech Republic market capitalization also exceed Romania's.

There is a number of **Romanian companies** who have been **listed** throughout the years on foreign stock markets (**especially LSE**), but their **success was mixed**, and their listing was not enough by itself to insure survival. To give an example, the first successful listing at the end of the 90s was followed by a shameful exit from the national market: the **Romanian-Turkish Bank**. Another example of unsuccessful listing is **Elvila**, who failed to attract the interest of foreign investors from the LSE.

At the end of 2006, however, the issuance of global depository receipts (GDR) by **A&D Pharma**, the owner of the pharmaceutical chain Sensiblu, was successful. **Flamingo** is also planning to enlist on LSE by the end of 2007.

Below are some details on how the **data for this section** has been gathered:

- For both the listing and the year of listing on the local stock exchange, the web page of the Bucharest Stock Exchange was used.
- For the Capitalization, the Share Capital was taken from the Balance Sheet or CNVM Yearly Report, depending on availability.

- Information on the non-listed companies, as well as additional comments were based on web reports and articles

2.2.2. Foreign Loans

The great majority of the analyzed companies (80% in 2004 and 2006, 75% in 2005) **do not resort to foreign** financial institutions for **loans**. Of the 14 companies that did go abroad for financing, **9 are controlled by companies abroad**. At the same time, only in the case of one company was the **owner outside the EU** (Alro Slatina, owned by Marco Industries from Russia).

In spite of this **apparent lack of interest** for foreign loans, if we are to consider the **relative share of foreign loans** out of the total loans of the companies, the amounts are **no longer negligible**. This is because there is a **correlation** between the size of the company and the ease with which it goes abroad for financing. Of the 14 companies who resorted to this type of loans, 12 have a capital in excess of 30 million RON, and 9 surpass 100 million RON with their subscribed and paid capital.

Table 4: Number of Romanian Companies According to Various Criteria

Year	Foreign Loans	Total Loans	Percentage
2004	2.040.609.573	3.673.142.347	56%
2005	2.284.216.048	4.036.760.151	57%
2006	1.002.156.558	3.533.399.847	28%
Total	5.326.982.178	11.243.302.344	47%

Below are some details on how the **data for this section** has been gathered:

- The amount of total loans has been obtained from the Balance Sheet, preferably the format used for reporting to the Ministry of Finance (see Appendix no. 2, Form 10, page 2). It has been obtained by adding the amount at point D.2 with the amount at point G.2.
- The amount of foreign loans was obtained from the set of accompanying notes to the financial statements (see Appendix no. 3, Notes 05 and 10). In most of the cases, Note 5 provides details on the Situation of Receivables and Payables, while Note 10 provides various Other Information.
- The Debt-to-Assets ratio was either extracted from Note 09 – Analysis of Main Financial and Economic Indicators, or computed directly as Total Debt over Total Assets.

2.2.3. Foreign Investments

This section makes reference to **financial investments** made to foreign companies. They may include, but are not limited to, bank deposits, loans granted to foreign institutions, investment funds, participation titles. Any reference to investments made in this section should be understood as financial investments described above.

The great majority of the analyzed companies (around 86% in 2004-2006) **do not resort to foreign** financial institutions for **investments**. Of the 9 companies that did go abroad for investing, **6 are controlled by companies abroad**. At the same time, only in the case of one company was the **owner outside the EU** (Alro Slatina, owned by Marco Industries from Russia).

The **apparent lack of interest** for foreign investments, was confirmed by the **relative share of foreign investments** out of the total investments of the companies. This is because Romanian companies either lack sufficient funds for investments, are unaware or not interested of the gains that can arise from foreign investments. Of the 9 companies who resorted to this type of investments, 12 have a capital in excess of 30 million RON, and 9 surpass 100 million RON with their subscribed and paid capital.

Table 5: Foreign Investments versus Total Investments, as per Year

Year	Foreign Investments	Total Investments	Percentage
2004	1.475.676.313	4.648.022.382	31,75%
2005	1.208.474.729	5.262.889.284	22,96%
2006	46.832.167	1.471.671.126	3,18%
Total	2.730.983.209	11.382.582.792	23,99%

The following table shows a selection of the **destinations of investment funds** for the 9 analyzed Romanian companies:

Table 6: Foreign Destinations of Investment Funds for Romanian Companies

Company	Majority Shareholder	Destination of Investment Funds
Rafo SA	Balkan Petroleum, England	Ownership of 49,47% of the capital of Rafo GmbH Austria
SNP Petrom SA	OMV, Austria	Investments in mutual funds and other financial investments Shares of companies from Hungary, Yugoslavia, Kazakhstan
Policolor SA	Romanian Investment Fund, Cyprus	Intercompany loan granted to Whitebeam Holding Ltd, net of depreciation provisions
Alro SA	Marco Group, Russia	Futures and options contracts through the external brokers Sempra and Refco
Romtelecom SA	OTE, Greece	Acquisition of bonds having EFG Hellas Plc as issuer and EFG Eurobank Ergasias SA as guarantor

Below are some details on how the **data for this section** has been gathered:

- The amount of total investments has been obtained from the Balance Sheet, preferably the format used for reporting to the Ministry of Finance (see Appendix no. 2, Form 10, pages 1 and 2). It has been obtained by adding the total at point A.III with the total at point B.III.
- The amount of foreign investments was obtained from the set of accompanying notes to the financial statements (see Appendix no. 3, Notes 01 and 10). In most of the cases, Note 1 provides details on the Situation of Fixed Assets (including Financial Fixed Assets), while Note 10 provides various Other Information.
- The Cash and Cash Equivalents ratio was either extracted from the Balance Sheet, at point B.IV, or obtained from the Cash Flow Statement.

2.2.4. Foreign Investors

On average, and without taking into account the differences in the size of the capital, foreign investors owned a package of **35% of each analyzed company**. A weighted average taking into account the size of the controlled capital indicates that foreign investors control **45% of the total analyzed companies' capitals**.

It is apparent that the sectors who are **of most interest to foreign investors** are the **oil industry** (3 out of 4 analyzed companies are controlled by foreign investors), the **pharma industry** (foreign companies control 2 out of 3 analyzed ones) and the **siderurgic** one (5 out of 6 are under foreign control). The following table shows a selection of the **extent of foreign shareholders control** for the analyzed Romanian companies:

Table 7: Extent of Foreign Shareholders Control, as per Company

Company	Share Capital	Share 2004	Share 2005	Share 2006
Rafo SA	432 mil RON	-	98,08%	97,94%
SNP Petrom SA	5.664 mil RON	51,01%	51,00%	51,00%
Alro SA	357 mil RON	84,19%	85,26%	76,09%
Mechel SA	172 mil RON	83,70%	81,04%	81,04%
Romtelecom SA	5.975 mil RON	54,01%	54,01%	54,01%

In the Central and Eastern Europe area, Romania has placed itself in the **top three destinations of foreign investments**, after Poland and the Russian Federation. As compared to the FDI levels in Western Europe, however, Romania is still far behind.

The foreign interests in the Romanian companies has triggered two effects: on the one hand, they **eased** the Romanian companies' **access to foreign markets and capitals**, and on the other hand, they **hastened the separate financial reporting** under group standards (will be discussed in detail in the following subchapter).

2.2.5. Reporting under IFRS or GAAP

More than 30% of the analyzed companies prepare a **separate set of financial statements**, either under IFRS, or under GAAP. Considering that most of the foreign investors belong to the EU area, the **framework most frequently adopted** for reporting was, as expected, **IFRS** (17 out of 19 cases). Two

companies belonging to the siderurgic sector, namely Mechel SA and Mittal Steel Roman SA, prepare statements in compliance with **GAAP**, because the mother companies (Mechel Russia, and Mittal Steel NV Holland) do so being primarily oriented towards the US stock exchanges.

The **main reason** behind the separate-standard reporting was the **belonging to an international group** (14 of 19 respondents). In one case (Oltchim SA), the preparation of IFRS compliant reports was due to **foreign bank requirements**. Oltchim has contracted several loans, from banks such as KfW, AKA Ausfuhrkredit, HSH Nordbank and Royal Bank of Scotland. The remainder of four companies are Romanian-owned groups (Electrica SA, Flamingo SA) that use IFRS-compliant regulations for the **consolidated financial statements**.

The **obligation** of European listed companies to **prepare reports using IFRS** from January 1st 2005 **impacted** on all **the companies under the control** of the mother company. This happened even though there have been **waivers and delays** in application for companies already reporting under GAAP (for example, Daimler-Chrysler).

2.2.6. Wages for Financial-Accounting Department

The purpose of this section is to determine the degree to which **changes in the business** finances and reporting **impacted on the number of employees** in the finance-accounting department, and most importantly their **pay grade**. Information was gathered for both the finance-accounting department and the company as a whole, in order to see if the **changes are characteristic** of only the finance-accounting department or for the entire company.

For the company as a whole, the total number of employees and the average salary per employee had **contrasting trends**, as the table below will show:

Table 8: Indicators of Employment and Related Payments

Indicator	2004	2005	2006
Average number of employees	2.404 employees 100%	2.154 employees 90%	2.003 employees 83%
Average gross monthly salary per employee	1.714 RON/employee 100%	2.012 RON/employee 117%	2.373 RON/employee 138%
Average gross monthly salary in the economy	768 RON/employee 100%	921 RON/employee 120%	1.077 RON/employee 140%
Gross salary ratio: companies versus economy	2,23 100%	2,18 98%	2,20 99%
Average gross monthly salary fund per company	4.120.801 RON 100%	4.334.374 RON 105%	4.752.644 RON 115%

On average, the **number of employees** in the analyzed companies **decreased**, most likely due to the company restructuring and efficientizing processes. The **average salaries for the companies** increased between 2004-2006 almost perfectly **in line** with the trend of the **average salary in the entire economy**. On the overall, the **salary fund** for the enquired companies **increased steadily** during the same period. In **52% of the cases**, the **information** on the number of employees **was available** for both the company as a whole, and for the finance-accounting department. The **ratio of employees in the finance-accounting** department to the **overall number of employees**, was of **almost 5%** during the period 2004-2006, with insignificant changes between the years. This is a sign that, during the analyzed period, the companies did **not find it necessary** to **increase the share of accountants** in order to deal with the changes in the quality and quantity of financial information.

In what concerns the **salaries in the finance-accounting department**, only 5 companies out of the 60 make determinable references to it, and **only 3** (SNP Petrom SA, Oltchim SA and Alro SA) **cover a timespan of the three years** (2004-2006). The table below shows the **data available** for the salaries in the financial-accounting department, compared to the company as a whole.

Table 9: Average Salary in the Financial-Accounting Department

Indicator	SNP Petrom SA			Oltchim SA			Alro SA		
	2004	2005	2006	2004	2005	2006	2004	2005	2006
Average Monthly Salary in the Company	1.462 100%	2.197 150%	3.362 230%	818 100%	1.098 134%	1.355 166%	1.729 100%	1.886 109%	2.507 145%
Average Monthly Salary in the Fin-Acct Department	2.959 100%	3.987 135%	6.114 207%	1.057 100%	1.318 125%	1.447 137%	2.477 100%	2.816 114%	3.611 146%
Salary Ratio Fin-Acct Department to Company	2,02 100%	1,81 90%	1,82 90%	1,29 100%	1,20 93%	1,07 83%	1,41 100%	1,49 106%	1,44 102%

Below are some details on how the **data for this section** has been gathered:

- The average number of employees in the company has been obtained from Form 30, Page 1, Section III of the yearly financial reports to the Ministry of Finance
- The total salaries paid by the company has been obtained from Form 20, Page 1, point 6 of the yearly financial reports to the Ministry of Finance
- The average number of employees in the financial-accounting department has been obtained from Note 08 – Information on Employees, Administrators and Directors. As alternative, the information was extracted from the Management's Report accompanying the Financial Statements.
- There have been cases where additional computations and assumptions needed to be made. For example, where the number of TESA personnel (Technical, Economical, Specialty and Administrative) was disclosed, the number of employees in the financial-accounting department was considered to be a quarter of this number.
- The average salary in the financial-accounting department has been obtained from the Management's Report accompanying the financial statements, where it was available and detailed enough to provide this information. Also, Note 08 provided some information, but mostly until 2004.

1.33.00 Cost of Reporting Software

The information on the acquisition cost of reporting software was available (at least partially) for **27 of the 60 analyzed companies**. There is an **obvious stratification** of the companies according to the **level of expenditure**: there are 4 companies whose yearly expenditure exceeds 300.000 RON, 13 companies who do not exceed 100.000 RON, and 8 companies who have not disclosed any expenditures in this area. For **no analyzed Company** did the **costs of reporting software exceed 1%** of the capital of that company.

Table 10: Top Acquirers of Reporting Software

Company	Cost of Software	Capital	% of Capital
Romtelecom SA	24.429.000 RON	5.975.000.000 RON	0,41%
Electrica SA	6.440.300 RON	3.384.435.000 RON	0,19%
Rafo SA	1.295.328 RON	432.026.955 RON	0,30%
Electrica Oltenia SA	315.350 RON	799.033.000 RON	0,04%

In the case of **Romtelecom SA**, the Company undertook a number of projects relating to development of key computer software applications, to be used by various organizational units of the Company, such as billing, finance, service order, human resources, payroll, industry regulation-related and work-in-progress management. These software applications were self-developed. For **Electrica SA**, the software is partially acquired and partially self-developed. The main costs are with the licenses and with the implementation of the software named Open SGC. This system is provided by an international software company, Soluziona, and integrates a billing system with customer support services and market research tools.

Rafo SA directed its expenditures in the field of reporting software to the acquisition of the Oracle Application Siveco Business Analyzer. This software is an integrated management information system. It provides facilities that go beyond simple financial-accounting data entry, such as what-if analysis or scenario analysis. This particular software has been successfully implemented in other large companies, such as Alro Slatina, Romtelecom and SNP Petrom.

Finally, **Electrica Oltenia SA** does not disclose the exact destination of the software acquisitions it has made, save for the fact that a part of it is involved in monitoring and reporting activities of the distribution network. A pessimistic estimation of the costs of reporting software was made, by considering that only 10% of the total amount of intangibles relates to this category.

The **relative lack of data** for this section can be explained by the fact that **software acquisition and development costs** are part of intangible assets, which in their turn represent a **small part of fixed assets** as a whole. It makes sense that only important figures representing the activity of the company should be accompanied by additional explanations.

3. Conclusions

At a global level, we are witnessing important changes in the financial reporting framework in terms of international harmonization. Of an unprecedented nature is the fact that such a world-scale change is governed not by a political, public authority, but rather a private, technical one.

The ongoing changes are not the result of geopolitical will, but rather of free market demand: multinationals look more and more abroad for financing, investors seek foreign opportunities for placing their money, banks look beyond their borders for new customers.

Whereas the most important standard-setting bodies (FASB and IASB) are still a long way from developing a completely satisfactory conceptual framework, they have recognized the benefits of cooperation and convergence with the purpose of harmonization.

The future global accounting standard will be most likely based on IFRS. More than 55 countries in the world have already adopted or are on the verge of adopting IFRS. There is still the danger that the globalization will be confined to Western culture countries, unless the cultural differences are properly addressed (for example, differences generated by religion).

The gradual adopting of IFRS in Romania will favor foreign direct investments, and simplify the access to foreign markets for Romanian companies in search of clients and capitals. In the case of Romania, the ongoing changes are rather politically-imposed (due to the EU accession) than market-demanded.

Compared to the rest of Central and Eastern European Countries, Romania is far behind in terms of market capitalization of its stock exchange. At the same time, Romanian companies are not a common presence on the stock exchanges of the financial centers of the world, such as LSE, NYSE or NASDAQ.

Large Romanian companies (SNP Petrom, Romtelecom, Electrica Oltenia) have started to contract credits from financial institutions abroad. However, a significant part of the loans relates to specialized funds from non-commercial banks, such as EIB, IBRD or IBRD, for specific restructuring and development projects.

With a few notable exceptions, Romanian companies do not invest their financial resources in opportunities abroad. The exceptions relate again to the most sizable of the local companies, such as SNP Petrom investing in developing its Balkans distribution chain, or Romtelecom acquiring bonds from Greece.

The most interesting sectors for foreign investors were the oil industry, the pharma industry and the siderurgic one. Romania is in the top three of foreign direct investments in Central and Eastern Europe. As a consequence of foreign acquisitions, Romanian companies have started to prepare separate reports for reporting to their parent companies abroad. This also happens in the case of Romanian groups preparing consolidated financial statements (they use IFRS as basis for consolidation).

On average, the number of employees in the financial-accounting department had a proportional evolution to the number of employees in the company. Although employees in the financial-accounting department are better paid than the average company employee, their salary, as compared to the average salary in the company, did not clearly evolve in any particular direction. The costs of integrated reporting systems have not exceeded in any case 1% of the analyzed company's capital. Larger companies, like Romtelecom or Electrica, have engaged in the acquisition of multi-million EUR integrated software solutions, such as the Siveco Business Analyzer or the Soluziona Open SGC. The absence of publicly

available data has placed serious limitations on the extent and accuracy of the findings of this study. In some cases, notably that of the salary in the financial-accounting department, the need for a longer period of study was felt. Originally, the study objectives were to analyze at least 10 consecutive years of companies activity.

4. References

- d'Arcy, A. (2006) *De Facto Accounting Harmonization versus National Context – Goodwill Accounting in Germany and Japan* University of Lausanne, Switzerland,
- Benston, G. J. ; Bromwich, M. , (2006): *Worldwide Financial Reporting : The Development and Future of Accounting Standards* Oxford University Press, Oxford
- Cooper, C.; Neu, D.; Lehman, G (2003): *Globalization and its Discontents: A Concern about Growth and Globalization* Blackwell Publishing Ltd.,
- Hansen, F. (2004) *Get Ready for New Global Accounting Standards* Business Finance Magazine
- Herdman, R. K. (April 2002) *Moving toward the Globalization of Accounting Standards* Schmalenbach Institute for Business Administration Conference, Cologne, Germany,
- Intriligator, M. D. (2001) *Globalization of the World Economy: Potential Benefits and Costs and a Net Assessment* Center for Globalization and Policy Research, UCLA, Working Paper No 2,
- Irvine, H. J.; Lucas, N. (2006) *The Globalization of Accounting Standards: the Case of the United Arab Emirates* University of Wollongong, Faculty of Commerce Papers,
- MacLulich, K. K.; Gurău, C. (October 2004) *The Relationship between Economic Performance and Accounting System Reform in the CEE Region: The Cases of Poland and Romania* Centre for Economic Reform and Transformation, Discussion Paper 2004/06,
- Martinez-Diaz, L. (2005) *Strategic Experts and Improvising Regulators: Explaining the IASC's Rise to Global Influence, 1973-2001* Business and Politics Magazine, Volume 7, Issue 3, Article 3,
- Nolke, A. (2005) *Introduction to the Special Issue: The Globalization of Accounting Standards* Business and Politics Magazine, Volume 7, Issue 3, Article 1,
- Stewart, G. B. , (September 2002) *Accounting is Broken. Here's How to Fix It. A Radical Manifesto* Evaluation Magazine, Volume 5, Issue 1
- Warren, C.S.; Reeve, J.M.; Fess, P.E. (1994) *Corporate Financial Accounting* Chapter 13, South-Western College,
- Wild, K. (June 2004) *Key Differences between IFRSs and US GAAP* Deloitte Assurance and Advisory, IAS Plus, Special Edition
- *** *The Accounting Profession. Major Issues: Progress and Concerns* United States General Accounting Office, September 1996
- *** *Report on US Portfolio Holdings of Foreign Securities as of December 31, 2005* Department of the Treasury, Federal Reserve Bank of New York, Board of Governors of the Federal Reserve System, December 2006
- *** *Report on Foreign Portfolio Holdings of US Securities as of June 30, 2006* Department of the Treasury, Federal Reserve Bank of New York, Board of Governors of the Federal Reserve System, May 2007
- *** *The Future of the Accounting Profession* The American Assembly, Columbia University, November 2003
- *** *Getting Numbers You Can Trust: The New Accounting* Harvard Business School Press, Boston, 1991

THE SIGNIFICANCE OF ETHICAL CONDUCT FOR THE ACCOUNTING PROFESSION

DUȚESCU Mihaela

Ph. D. Student, Faculty of Economics and Business Administration, University of Craiova, Craiova, Romania

Abstract: *By their nature, the financial and accounting activity, control, audit are closely related to ethics. Professional ethics may be understood in two ways: as an ethical reflection applied to a certain field of activity (profession) or as rules established by a professional group to warrant the practices of each of its members, reunited in a code, inclusively the deontological code of the profession.*

The subject of ethics in financial audit is debated both countrywide and globally due to the current international economic and political conditions. By this article is argued the need of ethics in financial audit, starting from the basic characteristic of this profession, the defining features of a profession are presented, the main characteristics of the financial auditor profession are analyzed, the main conflicts and pressures to which the financial auditor is subject are presented.

Key words: ethics, professional competence, confidentiality, morality

JEL classification: M 42

1. Introduction

The subject of ethics in financial audit is currently more and more debated countrywide and globally. Globalization and internationalization render new dimensions which the accounting profession has in its fight against corruption and frauds.

According to the explanatory dictionary of the Romanian language, ethics is defined for short as the aggregate corresponding norms of moral conduct. Ethics is the science on morals, on the supplementation norms regulating the relations among people, as well as their attitude towards society. Knowing ethics may help the accounting professional in overcoming ethical dilemmas, so that he should make suitable choices; even if the company does not benefit of such choices, but the public shall benefit that relies on the accounting professional and auditor (Duska and Duska, 2003).

There have been in time several accounting scandals worldwide that resulted in losses of billions of dollars for investors and shareholders. Such were due to the use of practices void of ethics, by the inaccurate presentation of information and the forging thereof.

By applying ethics in accountancy is ensured the supply of reliable information on the financial standing and transparent valuations of entities.

Shareholders, investors and other users of financial statements rely upon annual financial statements of a company, as they use the information supplied by them to take decision on the investment (David and Britton, 2004). The ethical duty of an accounting professional involves the observance of the highest morality standards and transparency in regard to the remittal of the information.

Ethical requirements are based on the International Ethical Code of accounting professionals issued by the International Federation of Accountants (IFAC) that became mandatory to be observed by all members of C.E.C.C.A.R., starting as of 1 January 2007. IFAC is a global organization of the accounting profession including 164 members from 125 countries. The role of this organization is to:

- establish and promote the international quality standards;
- facilitate the collaboration with the professional bodies composing such;
- act as a spokesman for the international accounting profession

Valentine&Fleischman (2002) mentions that such ethical codes:

- are used by companies to “create moralist” paradigms;
- “may reduce conduct void of ethics”
- may increase or inspire ethical and performance conduct;
- may increase the trust of individuals in their competences;
- may increase the belief in the ethical conduct of the company;
- demonstrates the existence of social responsibility;
- demonstrates the existence of moral conduct values in business in society (or in the profession).

2. Fundamental principles of professional ethics for accounting professionals

The ethical code establishes conduct norms and formulates the fundamental principles that should be observed by the accounting professionals based on: integrity, objectivity, independence, professional competence, confidentiality, professional conduct, technical and professional norms.

- Integrity – the accounting professional should be just, honest and sincere in fulfilling the works;
- Objectivity – the accounting professional should not give up when facing prejudices or a-priori opinions;
- Independence – the accounting professional should manifest himself/herself freely towards any interest, such as:
 - Incidence of family relations;
 - Acceptance to perform works based on unspecified fees;
 - Level of received fees;
 - Involvement as a corporate officer or employee;
 - Direct or indirect financial involvement in the activity of a client.
- Professional competence - the accounting professional should prove competence in fulfilling professional services and maintain his/her professional knowledge at the requested level, so as to ensure to the beneficiary a competent professional service, substantiated on the most recent evolutions in legislation, practice and technique;
- Confidentiality – the accounting professional should observe the confidential nature of information obtained during the fulfillment of professional services and he/she should not use, disclose such information without an express authorization. Nevertheless there are cases when the disclosure is authorized by the client, employer or law. The disclosure of confidential information supposes the consideration of the following requirements:
 - The interests of the parties should not be impaired
 - The existence of significant facts should be able to be supported with proofs
 - The chosen communication type should be compatible to the reaction liability of recipients
- The professional conduct (professionalism) – the accounting professional should refrain from any conduct that could discredit the profession. This involves honor and loyalty, the obligation of the professional to observe the applicable laws and regulations.
- Technical and professional norms – the accounting professional should fulfill his/her professional attributions in accordance with the relevant technical and professional norms issued by C.E.C.C.A.R., C.A.F.R., I.F.A.C.

Accounting professionals should have essential qualities, such as:

- Knowledge, competence and conscience;
- Spiritual independence and material disinterest;
- Morality, probity and dignity;

In conclusion, any accounting professional is under the obligation to enable the development of such qualities by:

- Permanent development of professional and general culture;
- Granting of utmost attention to each transaction and examined situation;
- Granting the necessary time to substantiate the private opinion before the formulation of proposals;
- Formulation of the opinion with sincerity, with no reservation;

3. Conclusions

The accounting profession is involved in the production and verification of accounting information deemed vital for users to take decisions. It plays a significant part in society. Shareholders, investors, creditors, employers, the government, etc. rely upon accounting professionals to perform the financial accountancy, issue economic and financial reports, consultancy in tax issues, efficient financial management, etc. Morality is the crucial factor in accountancy helping professionals to maintain their profession at a high level of prestige and integrity.

Philip G. Cattel (1990), claims that in order to support strong ethics, an accounting professional “should have a strong sense of values, the skill to analyze a situation in order to determine the ethical implications and an engagement for the well-being of others”

Iris Stuart (2004), recommends an ethical model comprising four stages:

- The accountant should recognize that an ethical dilemma occurred;
- He/she identifies the persons that would be interested in the result of such dilemma;
- He/she determines the alternative and values its effects upon each alternative in regard to the stakeholders;
- Selects the best alternative

There is a conflict between high ideals, the objectives of the accounting profession and the circumstances in which the accounting professionals, in this particular case - auditors, carry out their activity in the current economy. This conflict may be solved only by resorting to ethics as the only possible solution for the current pressures and conflicts in the environment in which the financial auditor carries out his/her activity.

There are economic, political, social and cultural pressures, such as time pressure related to fees, the pressure generated by competition, the pressure of maintaining a good reputation that do nothing else, but make the accounting professional responsible in fulfilling the expectations of numerous groups of persons with whom he/she very rarely gets in touch.

Ethics is also the solution for current dilemmas in the regard to the profession of a financial auditor:

- Financial auditors are not paid by those whose interests they represent;
- The profession of a financial auditor is a recent one versus the one of law or medicine;
- The objective of the accounting profession is to create trust in the modern environment of market economy;
- The financial auditor is under the obligation to protect the public interest;

In the last decade, the interest regarding ethics in accountancy recorded a significant increase. Ethics in accountancy is important both for the accounting professional and for those using their services, especially decision factors expecting that financial statements should be of utmost competence, objective and present a high reliability degree.

The accounting professional not only reports, but can influence the decisions of the corporate management. Hence, maintaining a high level of objectivity and integrity is essential in the field of accountancy.

Bean and Bernardi (2007), stated -accountants need more advanced tools to fulfill their obligations towards society, in this ever more complex environment with many grey nuances.

From here results the concrete necessity in the accounting profession as the ethical education of accounting professionals, an education that should enable the surpassing of simplest norms of good and bad, norms assimilated in childhood.

In conclusion, the necessity of ethics in financial audit is an incontestable fact.

4. References

- Abbot A.(1983) *Professional Etichs*, *American Journal of Sociology*, p. 856-885.
- Applbaum, A.(1999) *Etichs for Adversaries: The Morality of Roles in Public and Professional Life*.
- Codul Etic Național al Profesioniștilor Contabili (2006), Ediția a 3-a, revăzută și reclassificată în conformitate cu Codul Etic Internațional al Profesioniștilor Contabili, elaborat și revizuit de IFAC în 2005 [National Ethical Code of Accounting Professionals (2006), 3rd Edition, revised and classified in accordance with the International Ethical Code of Accounting Professionals, drafted and revised by IFAC in 2005].
- Cotel Philip G.(1990), *Accounting Etichs: A Practical Guide for Professionals*, Quorum Books, p.78-79.
- Duska Ronald F. și Brenda Haz Duska (2003), *Accounting Etichs*, Wiley-Blackwell, p.28.
- International Federation of Accounts (IFAC), (2007), *Policy position: regulation of the accountancy profession*.
- Stuart Iris(2004), *Etichs in the Post-Enron Age*, South Western Thomson,p.6.
- Valentine S, Fleishman G.(2002), *Etichs codes and professional's tolerance of society diversity*, *Journal of Business Etichs*, p. 301-312.

SUSTAINABLE DEVELOPMENT IN THE PRESENCE OF FOREIGN INVESTMENT. OMV PETROM CRITICAL ANALYSIS

ENE Sebastian George

Ph. D. Associate professor, Faculty of Finance and Accounting, Constantin Brâncoveanu University, Pitești, Romania, george_sene@yahoo.com

IONECI Mihaela

Ph. D. Assistant professor, Faculty of Management Marketing in Economic Affairs, Constantin Brâncoveanu University, Pitești, Romania, ioneci_mihaela@yahoo.com

CHILAREZ Dănuț

Ph. D. Assistant professor, Faculty of Finance and Accounting, Constantin Brâncoveanu University, Pitești, Romania, dan_chilarez@yahoo.com

Abstract: *This paper aims to conduct an analysis of the way in which we can speak of a country's sustainable development in the presence of foreign direct investment, starting from the sometimes conflicting interests of the two entities: on the one hand, transnational companies that want to maximise their profits by making full use of the advantages offered by the host country and, on the other hand, the host country that wants to develop a balanced economy, without jeopardising the development opportunities of the future generations. For this purpose a matrix was created and it quantifies the main indicators of sustainable development within OMV Petrom Company, indicators that are assigned to an appreciation category.*

Key words: matrix, sustainable development, indicators, foreign investment

JEL classification: G 32, F 23

1. Introduction

The concept of “sustainable development” is ever present in the economic, social, political and academic environments as a result of the increasingly significant need to reform the current economic-social system which has demonstrated its limits. The issues raised by durable development and subsequently by sustainable development demonstrate the increasing trend to build the future in a different context. The profound structural changes must also include the multinational companies which are the main economic actors of the world. At their level, the dominant expression should be changed: profit maximisation versus harmonious (sustainable) development.

In this context it is important to analyse how the concept of sustainable development is viewed today, the implications imposed by this type of development, the impact that foreign investment has on national economies and on their sustainable development, as well as the changes that should occur within organisations in order to be able to speak about real sustainable development. A strategy (Europe 2020 Strategy) has been outlined in Europe and it highlights the underlying principles of sustainable development. Thus, we can talk about intelligent growth, sustainable growth and social inclusion. Sustainable development involves a three-dimensional approach: economic, environmental and social. Multinational companies, through the multiple role they play in an economy, basically conform to the three issues above-mentioned.

2. Concepts on durability and sustainability

In the last decades of the twentieth century, the population started to become aware of the effects of the individuals' activities on the environment. It is difficult to thoroughly establish the debut of the harmful effects on the natural environment, but the multiplication of these effects was determined by the industrial revolution. The economic crises in the world economy in the '60s and '70s led to the awareness of the natural environmental deterioration, of the resources shortage related problems and of the demographic growth. In the '70s it was understood that the traditional model of economic growth and development had to face energy, environmental, etc. related issues.

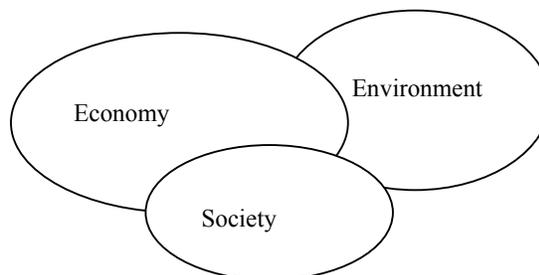
Even since 1951, the **International Union for Environment Protection** has published a report on environmental protection, showing the importance of the reconciliation of the economic environment with the natural environment.

To identify and present the concept that best expresses the struggle for a better life of the individual, but in full harmony with the environment, international meetings have been organised to explain the new concepts and to establish the strategies necessary to obtain the desired results.

In 1972 the **Environmental conference from Stockholm** took place, the first of many conferences which presented the relationship between environmental degradation and economic growth. Thus the concept of *eco-development* was born, formulated by Ignacy Sachs and Maurice Strong.

The awareness of environmental protection has triggered the creation of the **World Commission on Environment and Development from the United Nations**. The concept of sustainable development involves creating favourable conditions for the existence of economic growth achieved by inter-conditioning the social dimension with the economic and environmental dimensions.

Figure 1: The dimensions specific to sustainable development



Source: http://www.toronto.ca/sustainability/sustainability_theories.htm

In the first report of the **Club of Rome, entitled “The Limits of Growth,”** it is clearly emphasised that economic growth and development are restricted in their evolution by the natural environment. The Club of Rome report presented the factors that constrain economic growth: population, agricultural production, resources, industrial production and pollution.

In 1987, the **Committee on Environment and Development presented the Brundtland report** in which the concept of sustainable development concerns the continuity of human existence and of equal opportunities for the future generations. The report concludes by highlighting again the limits specific to the development patterns known and used in economy.

The United Nations Conference on Environment and Development in Rio de Janeiro in 1992 achieved a greater awareness on the concept of durable or sustainable development since a planetary negotiation has been started on climate changes. The purpose of this conference was the adoption of the Agenda 21, being considered the best way to implement sustainable development since it aims at all levels of aggregation and all areas in which people and the natural environment interact.

The World Summit on Sustainable Development in Johannesburg in 2002 has promoted new initiatives for implementing sustainable development and for building a prosperous and secure future for the world’s citizens, analysing the more and more serious threats that humankind has to face. (Popescu, 2005)

The minimum requirements for achieving sustainable development include the following aspects:

- resizing economic growth, assuming a more efficient and equitable use of the resources so that to obtain quality products with minimum and non-toxic waste;
- improving the quality of people’s lives by meeting the basic needs and by reducing uncontrolled demographic growth;
- preservation of the natural environment and resources quality;
- a stronger participation of the government bodies to make decisions on economy and natural environment.

For the next years the EU has adopted the Europe 2020 Strategy, a strategy that emphasises the importance of the changes in the present and in the future, an economic growth strategy. The strategy is intended to make the transition to an intelligent and sustainable economy and to support social inclusion. These three directions are interdependent, increasing the level of labour employment, the growth of productivity and of social cohesion.

Europe 2020 has five major objectives: labour employment, innovation, environment/energy, education, social inclusion

This strategy has established specific indicators and levels to be achieved in 2020 for each major objective, but the Member States have adopted their own national targets in these five areas.

Table 1: The objectives of Europe 2020 Strategy

Intelligent growth	Sustainable growth	Social inclusion
A level of public and private investments in research and development of 3% of the EU GDP	20% reduction by 2020 of the greenhouse gases emissions at the level of 1990	An occupancy rate of 75% of employment among the people aged between 20 and 64
An occupancy rate of 75% of employment among the people aged between 20 and 64	Increasing the share of renewable energy resources up to 20%	Reducing school dropout by less than 10%
Reducing school dropout by less than 10%	Increase up to 20% of the energy efficiency	Increase up to at least 40% of the share of higher education graduates or equivalent for the population aged between 30 and 34
Increase up to at least 40% of the share of higher education graduates or equivalent for the population aged between 30 and 34		Reducing by at least 20 million the number of people suffering or likely to suffer from poverty and social exclusion

Source: Table made by the authors using data from:

http://epp.eurostat.ec.europa.eu/portal/page/portal/europe_2020_indicators/headline_indicators

In the view of the strategy, **intelligent growth** is sustained by improved results in areas such as education; research and innovation; digital society. **Sustainable economic growth** means that the economic activities should protect the environment by developing and using new environmentally friendly technologies and production methods, by using intelligent and efficient electrical networks, all these leading to a more competitive economy, with low CO₂ emissions. **Social inclusion** involves modernising the labour markets and the social protection systems, creating better and more numerous jobs, usually for women, young people and people aged over 55, investment in professional training and skills improvement.

3. The matrix for sustainable development in the case of transnational companies

Nowadays, the analysis of the sustainable development concepts reveals three important points (intelligent growth, sustainable economic growth and social inclusion) that must also be present in a certain form within the enterprise regardless of its size. Transnational companies due to the effects they generate in the national economies, but also on regional and global level must act in convergence with the principles of the various strategies aimed at sustainable development. People speak more often within companies about social responsibility, environmental impact, intelligent growth or corporate governance. All these steps are part, to a greater or smaller extent, of assimilating the concept of sustainable development by these companies, which must act globally to ensure the sustainable development of the entire society together with the international governments and organisations.

Creating the matrix specific to sustainable development requires the following steps:

1. Identifying the elements that define sustainable development.
2. Identifying the indicators specific to multinational companies which suit the elements of sustainable development.
3. Creating the matrix (model) of sustainable development for multinational companies.
4. Creating a system of assessing the relevant information within the matrix of sustainable development for multinational companies.

In terms of the elements specific to sustainable development, they were mentioned earlier and they refer to intelligent growth, sustainable economic growth and social inclusion.

Based on these defining elements of sustainable development we should identify and overlap the elements specific to transnational companies.

Within companies the implementation of the above-mentioned elements can be done through the following indicators: economic performance indicators, environmental impact indicators, social responsibility indicators, research - development - innovation indicators, integrated technologies, human resources policy, management – change-orientation.

The economic performance indicators highlight the health of the company, its capacity to develop itself, to produce added value. At macroeconomic level, sustainability seen from this perspective may be understood by its participation to form GDP, paid taxes and fees, economic development.

In terms of environmental impact indicators, they aim at assessing how the company interacts with the environment (environmental protection, pollution in all its forms, environmental protection campaigns and to improve the environmental infrastructure).

The indicators of social responsibility should highlight the way in which the multinational company is socially involved within the civil society. It analyses the developed social policies, the social campaigns undertaken, the social impact produced in the community.

The research - development - innovation related indicators highlight the efforts made by the company to develop projects resulting in new, innovative technologies and products, that can protect the natural environment, reduce energy consumption and increase the company's efficiency.

The analysis of the way in which technologies are integrated within the company highlights its ability to implement technical progress, to meet the challenges of innovation.

The human resources policy as sustainable development indicator refers to how the company treats its employees. The focus is on issues related to payment, promotion, professional training, and company-wide recognition.

The company's management indicators show how the company's management is involved in sustainable development. We may consider: the type of applied management, the integrated management systems, the way in which the company's management treats the various aspects related to sustainable development, the orientation towards change and innovation.

Based on these considerations, we can outline the sustainable development matrix for transnational companies.

This matrix (APPENDIX No. 1) implies the existence of five information areas:

- area 1 shows which are the sustainable development indicators within the company;
- area 2 includes the specific indicators that provide information relevant to the sustainable development indicators. Basically, it follows a set of indicators and elements that characterize (and are part of) sustainable development indicators within the enterprise;
- area 3 is the assessment area of the specific indicators. A five-level scale is used from very unfavourable to very favourable to which a score was attached to fit the final score in a particular category;
- area 4 is the area in which the specific indicators prospects are assessed. Sustainable development means development in time, so the prospects are very important in assessing how the transnational company contributes to the sustainable development of a country's economy. We have chosen three ranges of assessment, worsening (-1), maintenance (0) and improvement (1), to which a score was attached;
- area 5 is the area specific to the score obtained by summing up the individual scores of areas three and four. Thus the overall score is obtained allowing the easy classification of the company in a particular category.

Regarding the score assessment system, it is presented in the table below

Table 2: Score assessment system

Company's attitude	Category	Score	Assessment
It contributes to sustainable development	A	48 - 72	It decisively contributes to sustainable development
	B	24 -47	It contributes to sustainable development
It does not contribute to sustainable development	C	1 - 23	It does not contribute to sustainable development
	D	(-23) - 0	Negative impact on sustainable development

	E	(-72) – (-24)	It largely undermines sustainable development
--	---	---------------	---

Source: Assessment system made by Sebastian ENE

To interpret the score, we have chosen a scale with five grades A - E, to each level we assigned a certain interval and a certain assessment.

- Class A - includes the score in the (48, 72) interval – it decisively contributes to sustainable development. This score can only be obtained if positive ratings are obtained in most cases for the two areas mentioned.
- Class B - includes the score in the (24, 47) interval – it contributes to sustainable development. The company conducts a series of activities that have a positive impact on sustainable development. This score is usually obtained by positive ratings, but not maximum ones. There are situations in which the company may submit a negative score for some specific indicators, but they are attenuated by the major positive score obtained for the other indicators.
- Class C - includes the score in the (1, 23) interval – it does not contribute to sustainable development. Although the company obtains a positive score, it has many gaps, it does not take care of the sustainable development related issues. In the future if such a company revises its policies, it may fall within Class B.
- Class D - includes the score in the (- 23, 0) interval - negative impact on sustainable development. Most indicators are negative; the company develops policies that undermine sustainable development.
- Class E - includes the score in the (- 72, -24) interval – it largely undermines sustainable development. Most indicators are negative, the (-2) score is frequently met. Through the policies promoted, the company does not only show lack of interest in sustainable development, but it also brings great disadvantages, jeopardising the economic-social development of the host country.

In this context we can say that we can outline an overview of the impact that a transnational company can have on sustainable development and hence on the national economy. This type of analyses can outline the government policy on FDI in transnational companies, facilitating the access of companies that are concerned with promoting sustainable development and confining the access to those undermining sustainable development and thus to the national economy.

4. Critical analysis of how Petrom - OMV company supports sustainable development

The reasons for choosing to analyse this company are many: it is the largest company operating in Romania, it operates in an area of great interest with impact on the national economy and on the natural environment; it has a large number of employees; it develops business throughout the country; it presents high transparency by posting various reports.

The critical analysis on the proposed matrix and the classification in a certain class allows us to outline an image of how this company exercises its influence in our country.

The calculations and the analyses are made for the years 2010 - 2011. They are based on the various reports published by Petrom - OMV, on financial statements, and on decisions of the Board of Directors.

We have punctually completed all the indicators in the matrix (APPENDIX no. 2) based on the information gathered.

1. Economic profitability – 2011 was a special year for Petrom, with the largest net profit and turnover not only for the company, but also for the entire country. In this context the score is assessed at 2 points. The prospects remain unchanged; in the future it is expected to have a slight increase.

2. Financial profitability – it presents the same trend as the economic profitability, noting that the prospects can be improved.

3. Profitability of the resources consumed – has increased, but the parameters did not undergo significant changes. There are prospects for improvement.

4. Environmental pollution – the company is concerned with the reduction of pollution, the European rules require this, the company being focused on obtaining products with environmental impact as little as possible. The concerns in this respect increase within the company (see the company's sustainable development strategy from 2012 to 2015).

5. Environmental policies developed by the company – the company develops integrated environmental policies designed to protect the planet - Pillar 2 THE PLANET from the sustainability

strategy. In the future the company will intensify the approach on environment and environmental policies.

6. Non-polluting technologies – the technologies aim at reducing the carbon emissions. These are contained in the “Environmental management strategy,” and in the company’s “3 plus” policy.

7. Social policies – the company develops a series of social policies and programmes at national and local level. The documents on “Social responsibility” and “Our Commitment” reveal how Petrom acts socially.

8. Social campaigns – they perform a series of social campaigns with national and local impact. In the future the company wants more involvement in such campaigns. (Our commitment to society; Volunteer involvement in Petrom and the Reports on social involvement).

9. Involvement in the community – it is the company which together with Vodafone is actively involved in the community.

10. Implementation of technical progress – it is an active company in this regard implementing efficient and non-polluting technologies. In the future, according to the Petrom strategy, the implementation degree will increase.

11. The technologies used – they are new technologies aiming to achieve less polluting products. One aim is to obtain the most efficient technologies.

12. Research programmes – Petrom - OMV is developing research programmes in the field of oil products and oil extraction and processing technologies. (Petrom Strategy and Annual Reports)

13. Research expenses – Petrom allocates a budget for research, but it is not made public. Consequently, this indicator will be denoted by (0) and concerning these prospects, they are considered as remaining the same.

14. Newly created technologies – the technologies that lead to extraction and processing are targeted. These technologies are not specified point by point, but in the Chapter Exploration and Production, Petrom refers to the type of technology used. The mention is identical to the one covering the research costs.

15. Income tax, VAT, excise – Petrom is the company with the largest profit in Romania. Consequently, the income tax was the largest, being the largest contributor to the state budget. In the future the situation will remain the same. The VAT and the excise duty paid to the state also place the company on the first place nationwide. (Report 2011)

16. Local taxes and fees – Petrom is one of the companies that run business throughout the country. Due to its scale, the local taxes and fees contribute significantly to Romania’s generally consolidated budget. (Report 2011)

17. Contributions to the social insurance – as in the case of point 15, Petrom is the largest contributor to the social insurance budget. (Report 2011)

18. Salary level – the average wage at Petrom exceeds the average salary in Romania. (Report 2011)

19. Promoting the employees – there is a HR department within the company; the Petrom policies in the field of human resources allow the employees’ development and promotion.

20. Improving the human resources – within company there are training programmes for the employees.

21. The satisfaction degree felt by the employees – it is estimated based on the salary and promotion policy. In these circumstances we believe that the employees have a positive attitude and the overall satisfaction degree exceeds the average felt in the Romanian companies.

22. Orientation towards change - the company shows a positive attitude; it looks to the future, so we can say that it presents orientation towards change.

23. Implemented management systems – the company is implementing various management systems (Sustainability report) designed to promote the company’s activities.

24. Innovation – the company shows a high capacity for innovation in its activity.

The score obtained (50 points) places the Petrom - OMV Company among the companies that contribute decisively to sustainable development. As a result of the analysis we find that the highest scores were obtained in the case of the economic performance indicators and taxes paid, something we consider normal because it is the biggest company in Romania.

Maximum scores have also been obtained in the case of the social responsibility indicators. In general, the large companies develop policies for social responsibility, as they are leaders in the field.

The lowest scores were obtained in the case of “Research expenses” and “Newly created technologies” as a result of the fact that after the analysis, the authors could not punctually identify these aspects, the company’s transparency from this point of view reducing the score of these indicators.

5. Conclusions

The current context requires such an analysis showing the impact that multinational companies have on the host country’s national economy and on sustainable development. The matrix created allows the quantification of the main indicators used in assessing their sustainable development and fitting in a particular category. An analysis of this type will allow on the one hand the host country’s government to adopt the measures necessary to support the entry and development of the businesses undertaken by the multinational companies that support sustainable development, and, on the other hand it will be able to restrict or limit the access of companies with misconduct towards the host country’s economy.

The matrix created aims at the current performance of the indicators specific to sustainable development, but it also creates the premises of analysing the way in which the multinational company outlines its future policies. The score assessment system allows the easy identification of the class the company is part of and of the attitude towards sustainable development.

6. Acknowledgements

This work received the financial support by the project ‘Post-Doctoral Studies in Economics: Lifelong training programme for elite researchers – SPOD’ co-funded by the European Social Fund through the Development of Human Resources Operational Programme 2007-2013, contract no. POSDRU/89/1.5/S/61755.)

7. References

- Aghion, P., & Howitt, P. (1997). *Endogenous growth theory*. Cambridge, MA: MIT Press.
- Blomstrom (Eds.), *Does Foreign Direct Investment promote development* Washington, DC: Institute for International Economics, pp. 195–220
- Carkovic, M., & Levine, R. (2005). *Does foreign direct investment accelerate economic growth*. In T. H. Moran, E. M. Graham, & M.
- Dobrescu E., Albu L.-L. (Coord.) (2005) *Dezvoltarea durabilă în România – modele și scenarii pe termen mediu și lung*, Ed. Expert, București
- Garland N., Hadfield M., Howarth G., Middleton D. *Investment in Sustainable Development: A UK Perspective on the Business and Academic Challenges*, Available at www.mdpi.com/journal/sustainability - published november 2009 ISSN 2071-1050
- Martens P., Raza M. *Is Globalisation Sustainable?*, Available at www.mdpi.com/journal/sustainability - published January 2011 ISSN 2071-1050
- Negrițoiu M. (1996) *Saltînaite - dezvoltarea și investițiile străine directe*, Editura Expert
- Popescu I., Bondrea A., Constantinescu M. (2005) *Dezvoltarea durabilă. O perspectivă românească*, Editura Economică, București, p. 18 – 20
- Waas T., Hugé J., Verbruggen A., Wright A. *Sustainable Development: A Bird’s Eye View*, Available at www.mdpi.com/journal/sustainability - published September 2011 ISSN 2071-1050
- Zaman Gh., Geamănu M. (2006) *Eficiență economică*, Ed. Fundației România de Măine, București
- http://www.toronto.ca/sustainability/sustainability_theories.htm
- http://epp.eurostat.ec.europa.eu/portal/page/portal/europe_2020_indicators/headline_indicators
- http://www.mmediu.ro/vechi/dezvoltare_durabila/international.htm
- <http://www.mdpi.com/search/?q=SUSTAINABLE>
- <http://www.sustainablemeasures.com/node/97>

APPENDIX 1: Matrix for sustainable development in the case of transnational companies

Sustainable development indicators within the company (SDIC)	Specific indicators comprised in the SDIC	Assessment interval					Perspectives			Score
		FN (-2)	N(-1)	NT(0)	F(+1)	FF(+2)	IN(-1)	M(0)	IM(+1)	
Economic performance indicators	Economic profitability									
	Financial profitability									
	Profitability of the resources consumed									
Environmental impact indicators	Environmental pollution									
	Environmental policies developed by the company									
	Non-polluting technologies									
Social responsibility indicators	Social policies									
	Social campaigns									
	Involvement in the community									
Integrated technologies	Implementation of technical progress									
	Technologies used									
Research - development - innovation indicators	Research programmes									
	Research expenses									
	Newly created technologies									
Taxes and fees	Income tax, VAT, excise									
	Local taxes and fees									
	Contributions to the social insurance									
Human resources policy	Salary level									
	Improving the human resources									
	Promotion									
	The general satisfaction level felt by the employees									
Management	Orientation towards change									
	Implemented management systems									
	Innovation									
TOTAL										

Source: Matrix made by Sebastian ENE

APPENDIX 2: Matrix for sustainable development in the case of OMV Petrom

Sustainable development indicators within the company (SDIC)	Specific indicators comprised in the SDIC	Assessment interval					Perspectives			Score
		FN (-2)	N(-1)	NT(0)	F(+1)	FF(+2)	IN(-1)	M(0)	IM(+1)	
Economic performance indicators	Economic profitability					x		x		2
	Financial profitability					x			x	3
	Profitability of the resources consumed				x				x	2
Environmental impact indicators	Environmental pollution				x				x	2
	Environmental policies developed by the company				x				x	2
	Non-polluting technologies				x				x	2
Social responsibility indicators	Social policies					x			x	3
	Social campaigns					x			x	3
	Involvement in the community					x			x	3
Integrated technologies	Implementation of technical progress				x				x	2
	Technologies used				x				x	2
Research - development - innovation indicators	Research programmes				x				x	2
	Research expenses			x				x		0
	Newly created technologies			x				x		0
Taxes and fees	Income tax, VAT, excise					x		x		2
	Local taxes and fees					x			x	3
	Contributions to the social insurance					x		x		2
Human resources policy	Salary level					x		x		2
	Improving the human resources				x				x	2
	Promotion				x			x		1
	The general satisfaction level felt by the employees				x				x	2
Management	Orientation towards change				x				x	2
	Implemented management systems					x		x		3
	Innovation					x			x	3
TOTAL		0	0	2	11	11	0	8	16	50

Source: Matrix made by Sebastian ENE

INSURANCE SYSTEM AND EUROPEAN INSURANCE MARKET DURING CRISIS – EVIDENCE FROM SOME POST-COMUNIST COUNTRIES

FÎRȚESCU Bogdan-Narcis

**Ph. D. Assistant professor, Faculty of Economics and Business Administration /Department of Finance,
Money and Public Administration, Alexandru Ioan Cuza University, Iași, Romania, firtescu@uaic.ro**

Abstract: *The economic crisis affects all financial system components, including insurance system, which is an important component. There are three types of financial crises: currency crises, banking crises and debt crises. The term insurance crisis is, in our opinion, different in its effects from economic crises in insurance industry. Economic crisis affects the insurance industry because of the insurance integration in financial system components and their interrelations. There was a delimitation between insurance, banking and financial markets, but we see nowadays, in the context of globalization, a major interaction between these fields (bankassurance and unit-linked insurance products are just a few examples). Actual paper wants to emphasize the evolution of the Romanian and other post – communist countries' insurance market during the recent financial crises. In this approach, we consider that the situation that characterizes the entire economy and financial system, it is also valid for insurance market and insurance system. Our research refers goal to some comparisons with the evolution of the European insurance system and market and other post-communist countries (Bulgaria, Czech Republic, Hungary, Poland and Romania). The analyze was focused on some important indicators such Insurance Density, Insurance Penetration Rate, total Growth Premium, Gross Written Premium in countries mentioned above.*

Key words: market, insurance density, insurance penetration, crisis, post-communist countries.

JEL classification:G 01, G 22

1. Introduction – Crisis on Insurance Market

The amplification of the socio-economic activities, diversification and apparition of new insurance objects, enhancing the effects of known risk and the emergence of new risks have led to the creation and development of insurance market, both globally and in Europe. Whole insurance market is, in this background, being composed of a multitude of national markets, regional branches of insurance markets, each with its own characteristics, determined by several factors such as participation of stakeholders in different proportions market, the predominance of sectors or types of contracts, its own regulations, the share of insurance and reinsurance activities in total, and so on.

Insurance market, characterized primarily by its size, is described by several indicators, such as the *number of contracts concluded during the reporting period, the number of active contracts during this period, the amount of premiums written and earned, the total the commitments made by insurers at a time.* (Văcărel, Bercea, 2000)

Characterization of the insurance market can be made by comparison with a competitive market considered perfect, considering the extent to which the insurance market meets the characteristics of such markets (product homogeneity, market transparency, market atomization, freedom of entry and exit of the market participants; decentralization of decision) (Cistelean, 1996). Economic literature summarizes some conclusions related to insurance market: insurance market products are not homogeneous; the insurance market is almost opaque to outsiders customers; freedom of entry and exit the market has some limits; licensing of new insurers, and maintaining the existing market is subject to specific regulatory requirements and insurance supervisory authority in each country; insurers decisions are decentralized, but must comply with specific legislation and opinions of the insurance supervisory body. All of these features lead us to conclude that the economic crisis, and its influence is felt differently on the insurance market, that react differently on certain segments.

The development of the insurance is valued based on indicators such as *penetration and insurance density*, giving receipts from *premiums to GDP* relationship, such the number of inhabitants, number of insurers, the *concentration of insurance activity network structure or distribution of insurance products*. All these can provide suggestive image to level of the evolution and development of insurance. The insurance system is a major component of the financial system of any country. In this perspective, the issue of insurance system is how to be define related to composition and structure of the financial system. Reported to the last, in the literature can be found multiple conceptual definitions, components, that describe the structure of the financial system. In terms of structure elements, with support from the

literature various approaches, can be retained as the financial system data revealed the following meanings (Fîrțescu, 2010):

a) financial (economic) relations system – a set of economic relations in cash, often called the financial, monetary and financial issues, which is circulated financial resources;

b) system of financial institutions – all institutions participating in the organization of financial relations, the creation and distribution of funds and the organization, conduct and control of economic activities;

c) as a system of financial funds – general fund cash resources that are in the economy at various levels (macro, medium and micro) and used in relation to certain destinations;

d) a financing system of the economy – the overall financing arrangements in the economy, being found most often in the form of capital market financing, by borrowing from banks respectively.

In relation to the boundaries above and we accept the financial system as a system approach to management and regulation of financial activity, reflecting the use of balances (plans) and financial activities focus on financial forecasting, an approach that is specific to particular financial subsystem public.

In accordance with the above conceptual approaches, structural and quantitative analysis regarding insurance system in Romania, related to some elements of comparability with other European Union countries, will focus mainly on the following approaches:

- insurance system as a system of financial relations – analysis of specific mutations in financial products within the insurance market relationships, in relation to a representative set of indicators (gross written premiums, the insurance penetration in GDP (%), insurance density (lei / capita));
- insurance system as a system of financial institutions – the analysis of the number in insurance companies;
- insurance system as a system of financial funds – aims to make about the capital of insurance companies;

In the context of mutation analysis performed on the insurance market, become relevant the reference to particular elements of its assessment, which differ from the event focused on supply and demand relations in other fields.

Some recent papers (Baluch, Mutenga and Parsons, 2011) suggests the term *insurance crisis*, that, in our opinion is different from the effects of an economic crises in insurance industry. Of course, an economic crises affects the insurance industry because of the insurance integration in financial system components (see above) and their interrelations. Even if, historically speaking, there was a delimitation between insurance, banking and financial markets, we see nowadays, in the context of globalization, a major interaction between these fields (bank assurance and unit-linked insurance products are just a few examples).

During time there have been a number of disturbances in insurance markets that were named “crises”. A first example that is, some periods characterized by the failure (or near failure) of one or a number of insurance firms, reduction in the supply of insurance and significant disruption of economic activity in the 1984–1986 in U.S. These events were called “liability insurance crisis”, during which U.S. property/casualty insurers made huge losses and insolvencies became commonplace. The collapse of the 300-year-old Lloyd’s insurance market in the early 1990s provides or shortage in terrorism cover following the events of 11 September 2001 is other examples of a major disruption in the insurance industry. These types of crises are not though the subject of our enquiry.

A review of economic literature suggests that there are also multiple definitions of *financial crisis* and channels that influence the insurance industry and market. A reliable definition is provided by SwissRe that define financial crisis as “*the collapse of a country’s financial system with serious effects on the real economy, caused by economic imbalances and/or political uncertainty. There are three types of financial crises: currency crises, banking crises and debt crises*”(Sigma, 2003).

Financial crises occurred periodically, well known being Mexico’s Tequila Crisis (1994-1995, currency and banking crises), Asian Crisis (1997/1998 currency and banking crises) and The Tango Crisis – Argentina (2001/2002) .

A review of economic literature reveals some conclusions about crisis effects on insurance. The economic impact of financial crises usually results in declines of economic output, the depreciation of currencies, increasing inflation and interest rates, and stock market crashes. During a debt crisis, defaults on government debt arises (Sigma, 2003). The effects of a financial crisis on an insurance market are multiple: demand for insurance drops, resulting in a decline in new business; increase in lapses of

savings-oriented life insurance policies; premiums usually lag behind inflation; claims increase promptly as a result of higher prices; insurers report negative technical results.

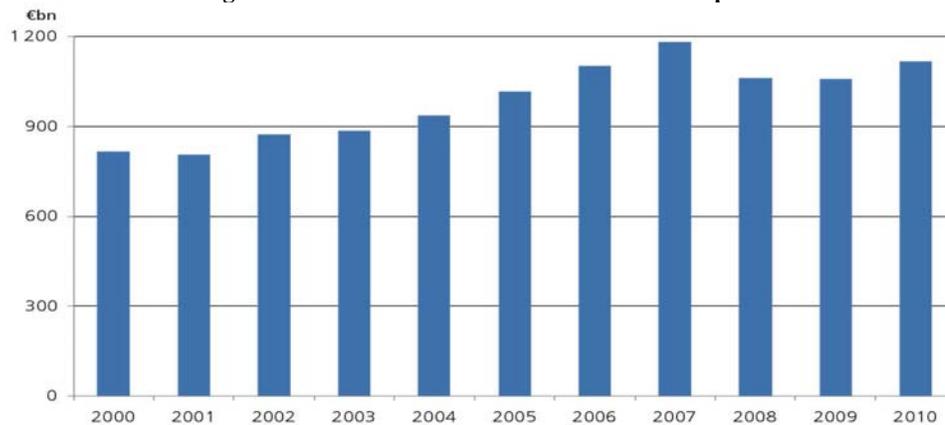
Some lessons can be learned from actual and previous crises. Insurers should take into consideration: strengthen risk management and supervision; use and understandable risk management; taken into discussion risk models and non-linearity; take heed of the lessons from agency and portfolio theory; financial conglomerates need to be supervised at the group level. (Elinga and Schmeiser, 2010) Actual paper wants to emphasize the effects of actual financial crisis on insurance industry, by analyzing the evolution in principal indicators that characterize the insurance market.

2. Insurance Market and Insurance System indicators – evolution during crisis

Evolution of market indicators in Europe – an overall approach

Data for 2009 indicate that the European insurance industry that was eroded by the economic crisis in 2008, recovered in terms of total premiums subscribed. Total premiums increased with 2.9% (constant exchange rates) to € 1 057bn, driven mainly by the life sector, that has more than 60% of all premiums. Compared to earlier year, the total amount of premiums decreased by more than 6%. Provisional figures for 2010 show that European insurers weathered the economic crisis well, as total gross written premiums increased by over 3.5%, at constant exchange rates, to reach €1 115bn (for comparison during 2000 to 2010 see figure 1).

Figure 1: Total Gross Written Premium in Europe 2000-2010



Source: CEA – Annual Report, 2010-2011, <http://www.cea.eu/index.php/facts-figures/statistical-publications/european-insurance-in-figures>, accessed on March 29, 2012, p. 4.

This growth is higher than that experienced in 2009, which was 3% at constant exchange rates. While the 2009 growth was mainly driven by the life sector, 2010 shows a rather different picture since similar growth is seen in both the life and non-life sectors.

After a sharp decline in 2008 due to financial crisis, on the European life insurance market were expected to reach € 647bn in 2009, which corresponds to a 4.7% increase over the previous year. After an increase of almost 3% in 2008, non-life insurance premiums decreased moderately in 2009 to € 409bn from € 417bn, being for the first time in the last decade, that from year to year growth rate of current was negative.

This development in non-life insurance is largely linked to the recession, in the context in which households and companies have dropped insurance contracts. Largest business line in non-life insurance, auto insurance was also the most affected (-2% at constant exchange rates).

Overall insurance density in 2009 was €1791 composed from €1097 spent on life insurance (€171- on health) and €694 on non-life insurance., being with €14 less than in 2008. Data suggests that GDP in Europe, at current exchange rates, contracted more than overall insurance premiums (-5.4% against -0.6%), a background where insurance penetration increased on average from 7.7% in 2008 to 8.1% in 2009. Life insurance penetration grew from 4.7% to 5.0% in 2009, whereas non-life penetration grew from 3.0% to 3.2% (CEA, 2011).

Insurance market indicators in some post-communist countries before crisis

An evolution of total direct premium in post-communist countries before crisis suggests that they are relative low (a maxim in Poland – 11,580 millions) in contrast with developed countries such United

Kingdom 366,572 million. As Table 1 shown, the maximum amount of premiums written is encountered in Poland and the minimum in Bulgaria.

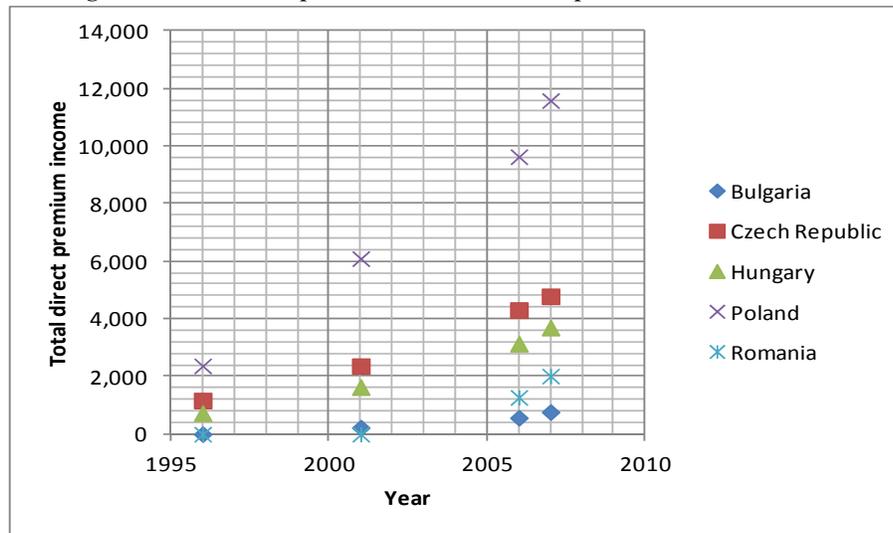
Table 1: Total direct premium income in some post-communist countries before crisis
(EUR millions)

Country	2007	2006	2001	1996
BG Bulgaria	769	571	228	n.a.
CZ Czech Republic	4,786	4,309	2,362	1,168
HU Hungary	3,701	3,142	1,635	730
PL Poland	11,580	9,631	6,095	2,371
RO Romania	2,018	1,276	n.a.	n.a.

Source: CEA data statistics, <http://www.cea.eu/index.php/facts-figures/statistical-publications>, accessed on March 20, 2012

A graphical evolution of the table data is presented below:

Figure 2: Total direct premium income in some post-communist countries



Source: own calculation, based on CEA data statistics

As Figure 2 suggests, from all five countries that we analyzed, Romania is on 4th place, with a total amount of 2,018 million Euro, in a worth situation being only Bulgaria (769 million Euro, with a growth from 269 million Euro in 2001). All countries had increases in market, a logical phenomenon in emerging markets. Growth trend can be explained by the European Union enlargement that oriented the insurance companies to these markets.

As data shows, the highest rate of insurance density in 2007 was encountered in Czech Republic (3,8%) and the minimum rate was in Romania (1,6%) (see Table 3 and Figure 4). All countries that we analyzed have an ascendant trend, suggesting an improvement of insurance market for the period. The explanation that Poland has a lower rate, even it have higher premiums can be explained by the growth of GDP.

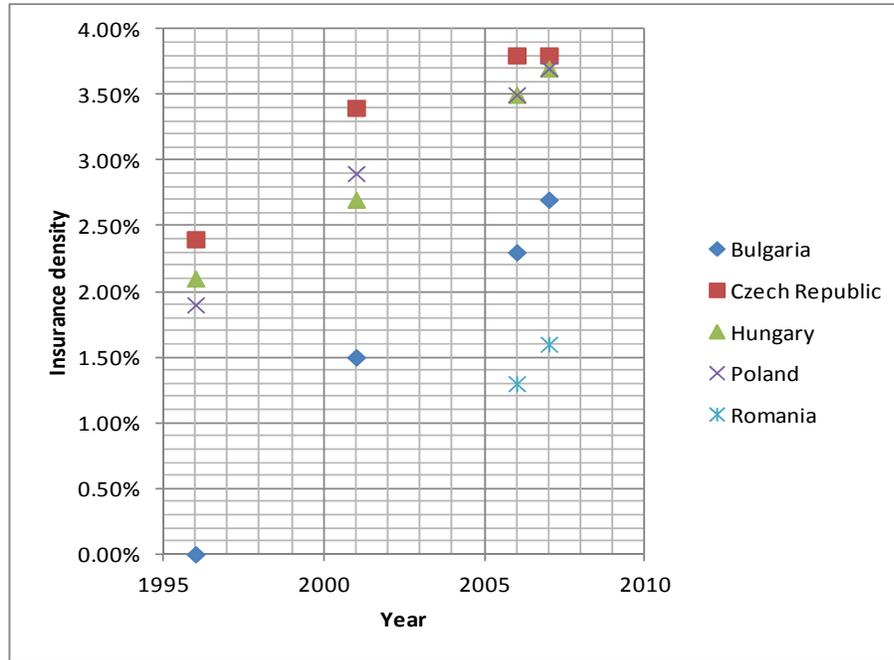
Table 2: Insurance density in some post-communist countries before crisis

Country	2007	2006	2001	1996
BG Bulgaria	2.7%	2.3%	1.5%	n.a.
CZ Czech Republic	3.8%	3.8%	3.4%	2.4%
HU Hungary	3.7%	3.5%	2.7%	2.1%
PL Poland	3.7%	3.5%	2.9%	1.9%
RO Romania	1.6%	1.3%		

Source: CEA data statistics, <http://www.cea.eu/index.php/facts-figures/statistical-publications>, accessed on March 25, 2012

Insurance market indicators during crises are presented below, focusing on some post-communist countries (see below Figure 3).

Figure 3: Insurance density in some post-communist countries before crisis



Source: own calculation, based on CEA data statistics

As graphical evolution suggests, Czech Republic has the higher rate of insurance.

Some insurance market indicators in post-communist countries during crisis
Bulgaria

In Bulgaria, total written premiums reached 1,681,504,392.76 BGN in 2009 and 1,589,669,315.90 BGN in 2010, decreasing from 1,810,847,614.67 BGN (2007). In non-life and life sector there are also reductions, the major decrease being in life insurance (-19.30 %) in 2008. As data suggests, a major fall was encountered in 2009 (-7.14%). As a short conclusion, crisis affected the insurance market in Bulgaria in both sectors (life and non-life), a peak of decrease manifested in 2009. These manifestations can be explained by the reduction of economic activity and income during crisis, that has the major impact on insurance industry (Table 3).

Table 3: Written Premiums and increase (nominal terms) during crisis in Bulgaria

Year	Written Premiums – nominal terms (BGN)			Increase in nominal terms compared with the previous year (%)		
	Non-life Insurance	Life Insurance	Total	Non-life Insurance	Life Insurance	Total
2010	1,374,786,757.52	214,882,558.38	1,589,669,315.90	-5.63%	-4.35%	-5.46%
2009	1,456,839,769.44	224,664,623.32	1,681,504,392.76	-4.93%	-19.30%	-7.14%
2008	1,532,438,439.81	278,409,174.86	1,810,847,614.67	-	-	-

Source: own calculation, data provided by <http://www.fsc.bg/Insurance-market-en-39>, accessed on March 23, 2012

The indicator insurance penetration was calculated at 2.2% against 2.3% in 2008, and the insurance density – at BGN 192.9 per capita of the population, compared to a value of BGN 201.7 in 2008. In 2009, the gross premium income written by life insurers amounted to BGN 222 million, a fall of 17.7% being noticed on annual basis. Following the dynamics of the insurance penetration which declined by 0.1% during the past year and in the end of 2009 reached 0.3%, the insurance density in the life insurance also decreased in the past year and amounted to 29.4 million BGN.

Czech Republic

On a base of an economic recovery in 2010, in Czech Republic we encountered a higher rate of growth of gross premiums written, which increased by 5.1% to 8.2%. This higher growth was explain by growth in the area of life insurance, where the rate of growth increased from 5.8% to 19.2%. Total gross premiums written amounted to CZK 156.0 billion in 2010 (see Table 4).

Table 4: Total Insurance Penetration in Czech Republic

	Amount CZK billions			Change (%)
	2008	2009	2010	2010/2009
Premiums written GDP (at current prices)	140	144	156	8.2
Premiums Written / GDP	3.689	4.0	4.3	x

Source: data provided by <http://www.fsc.cz/Insurance-market-en>, accessed on March, 23, 2012

Premiums written in life insurance increased by CZK 11.5 billion year on year to CZK 71.7 billion at the end of 2010. The increase in the rate of growth of premiums written in life insurance of more than 13%, at CZK 28.6 billion in 2010. The rate of growth in non-life insurance moderated slightly further compared to 2009, falling by 0.9 percentage point to 0.3%. Total gross premiums written in non-life insurance reached CZK 84.2 billion (based on statistics provided by *** - *Financial Stability Report*, CNB, 2011).

Insurance market concentration (as measured by shares in total premiums written) was gradually decreasing as a result of growing competition. In absolute terms, premiums written rose in 2010 in all groups except large insurance undertakings in the non-life insurance market, where they fell by CZK 2.4 billion to CZK 63.3 billion, and branches of foreign insurers in the life insurance market, where insurance premium collection declined marginally.

The situation encountered in Czech Republic is similar to other post – communist countries that we analyze, such Hungary Bulgaria or Romania, where the crisis affected the overall performance of the insurance markets.

Hungary

Total Gross premium in Hungary had a descending trend through 2008 to 2010, with a maximum decrease in 2009 in both life insurance market (-7.7%) and non-life insurance (-4%). An interesting situation is reported on Unit-linked insurance that had an important growth (16.7%) in 2010, suggesting that people oriented their savings to life investment portfolios. The overall situation is presented in Table 5 – Gross Premium, annual growth and breakdown, 2008-2010.

Table 5: Gross Premium, annual growth and breakdown, 2008-2010

Indicator	Gross premium (HUF Mn)			Annual growth (%)		Breakdown (%)	
	2008	2009	2010	2009	2010	2009	2010
Life insurance [excl. UL]	175 550	161985	152 370	-7.7%	-5.9%	19.6%	18.1%
Of that: Term life	14 013	15 366	17 839	9.7%	16.1%	1.9%	2.1%
Endowment	111 588	102 253	92 596	-8.4%	-9.4%	12.4%	11.0%
Terni fix	16 368	14 624	13 088	-10.7%	-10.5%	1.8%	1.6%
Other life	33 531	29 736	28 847	-11.4%	-3.0%	3.6%	3.4%
Unit-linked insurance	289 629	253 640	295 966	-12.4%	16.7%	30.7%	35.1%
Non-life insurance	427 590	410 300	394 703	-4.0%	-3.8%	49.7%	46.8%
of that: Accident	11 977	11 563	12 722	-3.4%	10.0%	1.4%	1.5%
Sickness	8 231	7 593	7 599	-7.3%	0.1%	0.9%	0.9%
Motor vehicle (Cisco]	98 877	89 613	82 164	-9.4%	-8.3%	10.9%	9.7%
MTPL	135 627	129 984	118 022	-4.2%	-9.2%	15.7%	14.0%
Fire and natural forces	79 521	80 907	82 089	1.7%	1.5%	9.8%	9.7%
Other property damages	58 316	57 223	58 854	-1.9%	2.3%	6.9%	7.0%
Liability	18 874	18 556	17 5tn0	-1.7%	-5.4%	2.2%	2.1%
Total	892 769	825 924	843 038	-7.5%	2.1%	100.0%	100.0%

Source: *** - Risk Report, June 2011 HFSA, http://www.pszaf.hu/data/cms2316083/risk_report_I_2011.pdf, accessed on March 22, 2012

In Hungary, the situation is comparable with other post-communist countries: crises affected the evolution of insurance market (in both sectors – life and non-life). We consider that influence factor are reduction of economic activity and income during crisis with major impact on insurance industry and orientation of investments to unit-linked products.

Poland

A different situation is met in Poland, where, during crisis, the insurance market continued to grow (overall growth – 5%), as the table no 5 suggests. Gross Written Premiums manifested a growth trend in 2010 relative to 2009 (105%) from 51343741 thousand ZL to 54159423 thousand ZL. The growth is present in both market segments: non-life (3%) and life insurance (7%).

The conclusion is that financial crisis didn't affected the Polish insurance industry and market in 2010. As a on-line report sows though "the Polish insurance market has performed reasonably well over the past couple of years except 2009 when the financial crisis hit the market badly. It grew of over 13% during 2005-2009. The Polish insurance market is dominated by life insurance segment that has shown more consistent growth and outperformed non-life counterpart over the last few years. However, life insurance fell sharply in 2009 owing to adverse economic conditions" (cited from ***- Poland Insurance Market Forecast 2008-2010, <http://www.rncos.com/Report/IM593.htm> , accessed on 10 February 2012).

Table 6: Written Premiums and increase (nominal terms) during crisis in Poland

Specification	Value (in thousand ZL)		Dynamics (in %)
	2009	2010	2010/2009
Total gross written premiums	51,343,741	54,159,423	105.48%
Life	30,283,456	31,420,426	103.75%
Non-life	21,060,285	22,738,997	107.97%

Source: http://www.knf.gov.pl/en/about_the_market/Insurance/Financial_and_statistical_data/Annual_data/annual.html, accessed on March 22, 2012

The life insurance and non-life insurance sectors encountered positive results in 2011. Non-life insurance companies recorded also a growth of amounting to 0.3 billion zlotys (in the corresponding period – 0.9 billion zlotys). The evolution is explained by price rises for automobile insurance in the largest product groups – automobile third party liability insurance OC and autocasco insurance and property damage insurance. (FSR 2012, Bank of Poland)

According to our new research report "Poland Insurance Market Forecast (2008-2012)", demand for life insurance products in Poland has again picked up with the revival of economy and improvement in income level. This is evident from the fact that the gross written premium by life insurers has increased by around 4% during the first quarter of 2010 over the same period last year. With this revival in demand for life insurance products, the gross premium written by life insurer is expected to grow at a CAGR of around 16% during 2009-2013.

Romania

Total gross premiums written by insurance undertakings in 2010 on both insurance categories reached 8,305,402,152 lei, down in nominal terms by 6.36% compared with the previous year, with a real rate pointed to 13.26% in real terms, considering the impact of inflation (see table 7).

Table 7: Gross Written Premiums in Romania (2006-2010)

Year	Gross written premiums	Increase in nominal terms compared with the previous year	Inflation rate	Increase in real terms compared with the previous year
	(lei)	(%)	(%)	(%)
2006	5,729,284,541	29.70	4.8	23.68
2007	7,175,789,699	25.25	6.57	17.53
2008	8,936,286,505	24.53	6.3	17.15
2009	8,869,746,957	-0.74	4.74	-5.23
2010	8,305,402,152	-6.36	7.96	-13.26

Source: CSA. Annual Report, 2011, http://www.csa-isc.ro/index.php?option=com_content&view=article&id=70&Itemid=77&lang=en, accessed on March 20, 2012

Total gross written premiums also include the premiums written in other European Union Member States (Italy, Belgium, Bulgaria, Estonia, Latvia, Lithuania and Hungary) by first five insurance undertakings authorized in Romania, premiums which totaled 75,498,697 lei, of which 76.25% account for premiums written in Italy. In 2010, the gross premiums written by domestic insurance undertakings in other EU Member States were slightly higher than the gross premiums written in Romania by the branches of insurance undertakings authorized in other Member States, on the basis of the freedom of establishment (CSA, 2011).

The drop in the volume of gross written premiums combined with the increase in current price GDP has led to a slight fall down in the insurance penetration rate in 2010, as shown below.

All data suggest that in Romania the effects of economic crisis were strong (13% decrease in real terms in 2010 and 5% in 2009), due by influence of general economic factors, such inflation, depreciation of exchange rate, but also specific factors such the drop of insurance contracts from companies and people, the diminution of ages, income, the decrease of leasing market and so on.

The drop in the volume of gross written premiums combined with the increase in current price GDP has led to a slight fall down in the insurance penetration rate in 2010. Thus, the insurance penetration rate (the ratio between gross written premiums and GDP) was 1.62%, with 0.18% lower than in 2009. It was the first year of lower insurance penetration rate, considering that by 2010, this indicator had been on a consistent upward trend.

Regarding Romanian indicators, an evolution during the period 2003 – 2010 is shown in table and figure below:

Table 8: Insurance Penetration Rate and Density in Romania

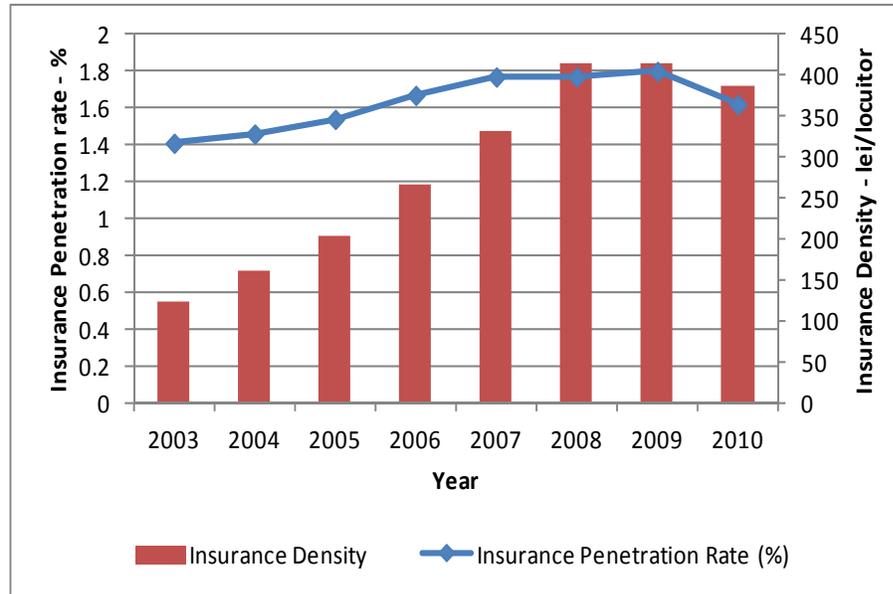
Indicator	2003	2004	2005	2006	2007	2008	2009	2010
Insurance Penetration Rate (%)	1,41	1,46	1,54	1,67	1,77	1,77	1,80	1,62
Insurance Density (lei/inhabitant)	123	160,4	204	265,7	332,4	415,62	413,27	387,85

Source: CSA. Annual Report, 2011, http://www.csa-isc.ro/index.php?option=com_content&view=article&id=70&Itemid=77&lang=en, accessed on 25 September 2011

According to insurance categories, the insurance penetration rate calculated for non-life insurance was 1.29%, and 0.33% for life insurance. Compared with 2009, the insurance penetration rate for non-life insurance went down by 0.18 %, while the insurance penetration rate for life insurance was approximately the same, around 0.33%.

Insurance density is another insurance specific indicator, calculated as the ratio between gross written premiums and the number of inhabitants in Romania. Insurance density reached 387.85 lei/inhabitant, 25.42 lei/inhabitant less compared with 2009 (when the same indicator reached 413.27 lei/inhabitant). The table shows that during crisis indicators decreases (except insurance penetration rate).

A graphical evolution of the table data is presented below:

Figure 4: Insurance Penetration Rate and Density in Romania

Source: own calculation using data provided by CSA Report 2011, http://www.csa-isc.ro/index.php?option=com_content&view=article&id=70&Itemid=77&lang=en, accessed on 25 September 2011

As table and Chart suggests, non-life insurance density was 310.06 lei/inhabitant, i.e. 27.34 lei/inhabitant less than in 2009, while life insurance density was 77.78 lei/inhabitant, roughly the same as in 2009, i.e. only 1.92 lei/inhabitant more, having an decreasing trend during crisis.

3. Conclusions and lessons to be learned from crisis

Related to some post-communist countries situation, for the first years of transition, we can notice a lack of insurance sector development, especially in terms of quality, which can be explained by the contribution to the mandatory components, although the downward trend, most policies are bought because of legal or contractual constraints. One can therefore appreciate that the development of the insurance sector was supported mainly by compulsory component, but a tendency to strengthen the voluntary component of insurance contracts.

We conclude, as literature suggests, that crisis expand major risks that affects the insurers, such as: a rise in interest rates; currency devaluation; decline in property prices; the increasing of credit risk (incl. government default); fall in stock markets; higher inflation; expansion of political risk. Some lessons can be learned from actual and previous crises, that insurers should take into consideration some actions: strengthen risk management and supervision; use and understand risk management; take heed of the lessons from agency and portfolio theory; introduction of supervision to financial conglomerates that need to be supervised at the group level.

Our survey in some post-communist countries was focused on major market indicators, grouped in two periods before crises (until 2008) and during crisis (after 2008). For the first period of time, all countries that we analyzed have an ascendant trend in insurance density (from 1,3% and 3,8% - overall in all countries) and written premiums, suggesting an improvement of insurance market for the period. From all countries, Poland performed better, Romania being on 4th place, in last place remained Bulgaria. Romania encountered also a decreasing in written premiums and insurance density during crises, to name only some of the indicators.

As data suggests, all indicators went down during crises, an opposite situation being entitled in Poland. Written premiums fall down in all countries taken into discussion, except Poland. Crisis affected European insurance market in 2008 and 2009, but there were some signals that in 2010 and 2011, the situation improved.

For the period before crisis, we find a continuous increase in the share of industry revenue from premiums earned total premiums of life insurance business, especially in emerging countries, such Eastern Europe's ones. Apparently, the modest place held by post-communist countries on the European insurance market is determined primarily by the small size of their economy. There is, however, that in

recent years due to high growth rate, well above the world and European average, and Romania, besides other emerging markets, climbed in the ranking of insurance markets. As shown above, Poland and Czech Republic overcome the other countries in the region.

4. Acknowledgments

This work was supported by the project “Post-Doctoral Studies in Economics: training program for elite researchers – SPODE” co-funded from the European Social Fund through the Development of Human Resources Operational Program 2007-2013, contract no. POSDRU/89/1.5/S/61755.)

5. References

- Blundell-Wignall, A., P. Atkinson, and S.H. Lee (2008) *The Current Financial Crisis: Causes and Policy Issues*, <http://www.oecd.org/dataoecd/47/26/41942872.pdf>, accessed on 23 February 2012
- Baluch F., Mutenga, S., Parsons, C. (2011), *Insurance, Systemic Risk and the Financial Crisis*, Geneva Papers on Risk & Insurance - Issues & Practice, 36(1), p.126-163
- Cistelecan, R, Cistelecan, R (1996) *Asigurări comerciale*, Tg. Mureș, Editura Dimitrie Cantemir
- Dorfman, M (2008) *Introduction to Risk Management and Insurance*, 9th Ed., New Jersey, Prentice Hall
- Eling, M. and Schmeiser, H. (2010) *Insurance and the Credit Crisis: Impact and Ten Consequences for Risk Management and Supervision*, Geneva Papers on Risk and Insurance, Vol. 35, No. 1, pp.9–34.<http://www.mathematik.uni-ulm.de/numerik/preprints/2009/credit-crisis.pdf>, accessed on 23 February 2012
- Fîrțescu, B. (2010) *Sistemul financiar al României*, Iași, Editura Universității Alexandru Ioan Cuza
- Lungu N. (2002) *Bazele asigurărilor de bunuri și persoane*, Iași, Sedcom Libris;
- Stanley, B., Mutengab, S. and Parsons, C. - *Insurance, Systemic Risk and the Financial Crisis*, <http://www.palgrave-journals.com/gpp/journal/v36/n1/pdf/gpp201040a.pdf>, accessed on 23 February 2012
- OECD (2009) *The Financial Crisis: Reform and Exit Strategies*, OECD, September, Paris, available at <http://www.oecd.org/dataoecd/55/47/43091457.pdf>., accessed on 23 February 2012
- CEA (2011) *Annual Report*, <http://www.cea.eu/index.php/facts-figures/statistical-publications/european-insurance-in-figures>, accessed on 29 September 2011;
- CEA (2011) *European insurance-key facts*, <http://www.cea.eu/index.php/facts-figures/statistical-publications/european-insurance-in-figures>, accessed on 29 September 2011;
- CEA (2011) *European insurance in figures*, <http://www.cea.eu/index.php/facts-figures/statistical-publications/european-insurance-in-figures>, accessed on 29 September 2011;
- *CSA Report 2001-2010*, http://www.csa-isc.ro/index.php?option=com_content&view=article&id=70&Itemid=77&lang=en, accessed on 25 September 2011;
- *BNR Raport asupra stabilității financiare, 2006-2010*, <http://www.bnro.ro/PublicationDocuments.aspx?icid=6711>.
- Lloyd’s (2008) *Directors in the Dock—Is Business Facing a Liability Crisis*, Report by Lloyd’s of London in association with the Economist Intelligence Unit, <http://www.lloyds.com/~media/Lloyds/Reports/360%20Liability%20Reports/directorsinthedock.pdf>.
- Swiss Re (2006) *Credit insurance and surety: Solidifying commitments*, Sigma No. 6/2006, Swiss Reinsurance, Company, Zurich, Switzerland.
- Swiss Re (2009) *World insurance in 2008*, Sigma No. 3/2009, Swiss Reinsurance Company, Zurich, Switzerland.
- Văcărel, I, Bercea, F. (2000) *Asigurări și reasigurări*, Ed. a II-a, București, Editura Expert;

THE TESTING OF THE CONNECTION'S INTENSITY AND OF THE DEPENDENCE SIGNIFICANCE BETWEEN THE ALLOCATIONS VALUE, THE SOLICITED VALUE THROUGH THE SUBMITTED PROJECTS, THE VALUE OF THE APPROVED PROJECTS, THE VALUES OF THE CONTRACTED ONES AND THE ABSORPTION CAPACITY IN THE OPERATIONAL PROGRAMME ADMINISTRATIVE CAPACITY DEVELOPMENT

FLORESCU Daniela

Ph. D. Assistant professor, Faculty of Financial Management, Department of Finance and Banking, University of Finance and Banking Bucharest, Romania, danaflorescu70@gmail.com

Abstract: *The recent years have brought a significant dynamics at the European Union level, in a domain that is still under a consolidation process – the territorial cohesion. Its philosophy represents the expression of a balanced, coherent and harmonious territory development, in terms of economic and social activities, in terms of environment endowment, accessibility and quality, and also in terms of the existence of equitable living and working conditions for all the citizens, irrespective of the place they live in. The main objectives that were covered consisted of studying and determining the factors that led towards a reduced absorption degree and implicitly with the passing of time towards an enhancement of disparities between the regions of our country and the ones at the European Union level.*

Key words: absorption capacity, convergence, correlation, structural funds.

JEL classification: F 36, F 43, O 19

1. Introduction

The current cohesion policy is essential for the construction of the European Union, one of the fundamental objectives is the strengthen of the economic – cohesion by reducing the regional disparities. This is also the reason why the member states participate to a European regional policy financed from European funds, which confers a concrete and immediate meaning for the communitarian solidarity. The European funds do not represent an inward purpose, but instruments in reaching the objectives established at the level of the European Union, of the EU member state, based on the implementation documents. Given the communitarian budgetary limits, obtaining the favorable effects of the cohesion policy must be also supported by an integration strategy providing the cohesion of the national and communitarian policies for the purpose of achieving a balanced development in the Community. Furthermore, recent economic theories confirm this approach through many case studies that prove the fact that *Geography matters, however the regional policy can change things.*

After 1987, when the programming approaches was introduced, the Member States whit advanced governing systems Great Britain, the Netherlands, the Scandinavian countries have an important advantage, as they had already got used to this kind of planning technique. The strategic planning model extended to the use of structural funds with certain difficulty, mainly generated by overlapping and lacks in coordination between the regional development programs and other regional programs, like the Local Action Plans for Environment, Rural Development Strategies.

The access to Social and Cohesion Funds offers Romania a possibility to develop the regions which are lagging behind, to modernize transport and environment infrastructure, to support rural development, to create new employment opportunities, to sustain social policies which will lead to the growth of the standard of life.

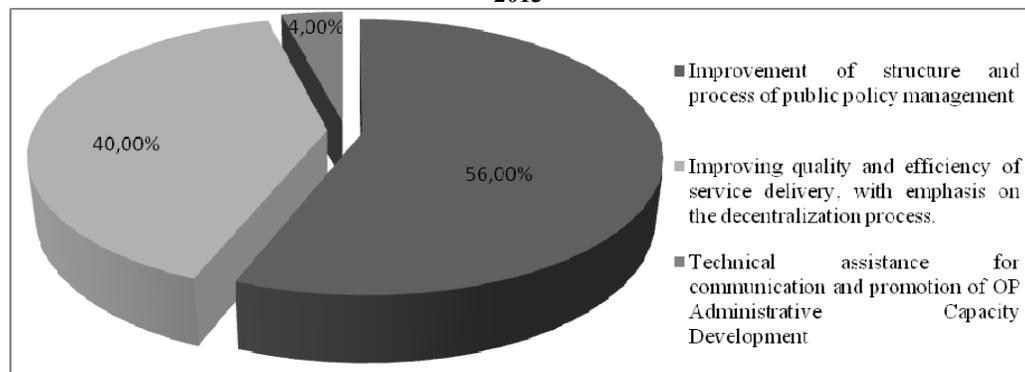
2. The Operational Programme Administrative Capacity Development

According to The National Strategic Reference Framework Romania prepared seven operational programmes under the Objective „Convergence”:

- *Regional Operational Programme (ROP)* is the programme which implements important elements of the National Strategy for Regional Development of NDP contributing together with the other Sectoral Operational Programmes to the achievement of the general objective of the Regional National Strategy namely the reduction of the disparities between Romania's regions and member states of European Union.

- *Sector Operational Programme of Environment (SOP Environment)* – it is based on the objectives and priorities of environmental policies and European union infrastructure development policies with the purpose of protecting and improving the quality of the life environment in Romania.
- *Sector Operational Programme for Transport (SOP-T)*, with the objective of promoting in Romania a sustainable transportation system which will allow rapid, efficient and safe transportation of persons and goods and services of a high quality level according to European standards.
- *Sector Operational Programme Increase of Economic Competitiveness (SOP-IEC)*, having as a main objective the increase of Romanian companies' productivity in order to reduce the disparities compared to the average productivity of European union.
- *Operational Programme Development of Human Resources (SOP-DHR)* – the objective of this programme aims at developing human capital and increasing its competitiveness by connecting education and lifelong learning to labour market.
- *Operational Programme for Technical Assistance (PO-AT)* - the objective is to ensure support for the coordination and the implementation of the structural instruments in Romania, to ensure reliable managing and monitoring system for these instruments and to ensure appropriate communication to the general public about the European Funds.
- *Operational Programme Administrative Capacity Development (OP-ACD)* aims at the creation of a more efficient and effective public administration for the socio-economic benefit of Romanian society. For this programme were allocated funds in amount of 246.0 million euro (of the total 19.8 billion euro allocated for the seven programs, during the period 2007-2013).

Figure 1:. Distribution of the axis of the funds allocated funding in the OP – ACD during the period 2007 - 2013



Source: author's processing based on data provided by National Strategic Reference Framework 2007 – 2013

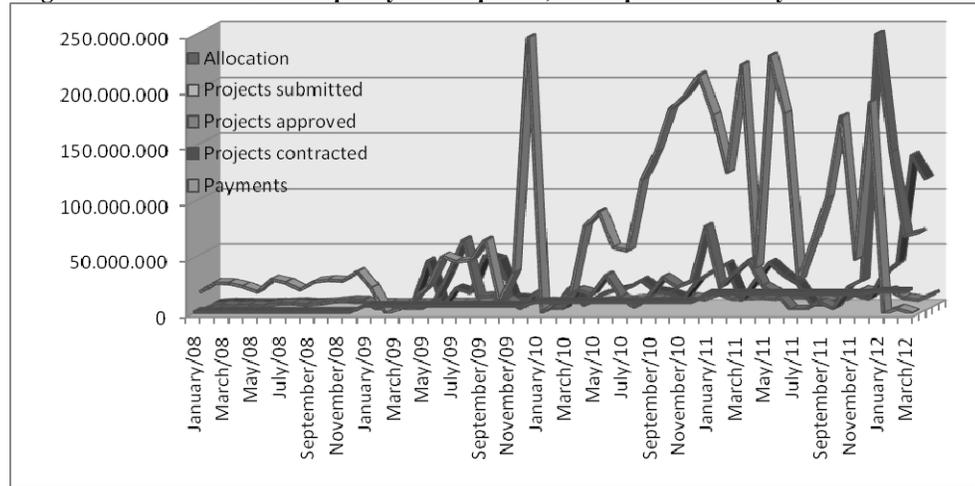
Addressing areas such as public policy formulation, strategic planning, strategic management, monitoring, evaluation and availability of information regarding administrative costs needs to improve decision-making system and, in this context contributes to efficiency and effectiveness of public administration. A strategic management approach and emphasis on measurement and performance assessment meet the need for better consultation mechanisms in development public policy and adopt a results-oriented management of government programs.

3. The testing of the connection's intensity and of the dependence significance between the allocations value, the solicited value through the submitted projects, the value of the approved projects, the values of the contracted ones and the absorption capacity in the Operational Programme Administrative Capacity Development

As shown above OP, is the program that applies to both local and central authorities, there is support from the European Union still in the Phare period.

With experience in implementing projects with European funds authorities have submitted projects from the first opening lines of grants, but after the second half of 2009, the process took on a larger scale, all of this period being evaluated and many of them contracted. Moreover, after March 2010, if the evaluation and contracting activities have kept the trend, activity for submission funding has grown at a galloping pace.

Figure 2: The situation on the submission, approval, contracting and financing of grants, the Operational Programme Administrative Capacity Development, in the period January 2008 - March 2012



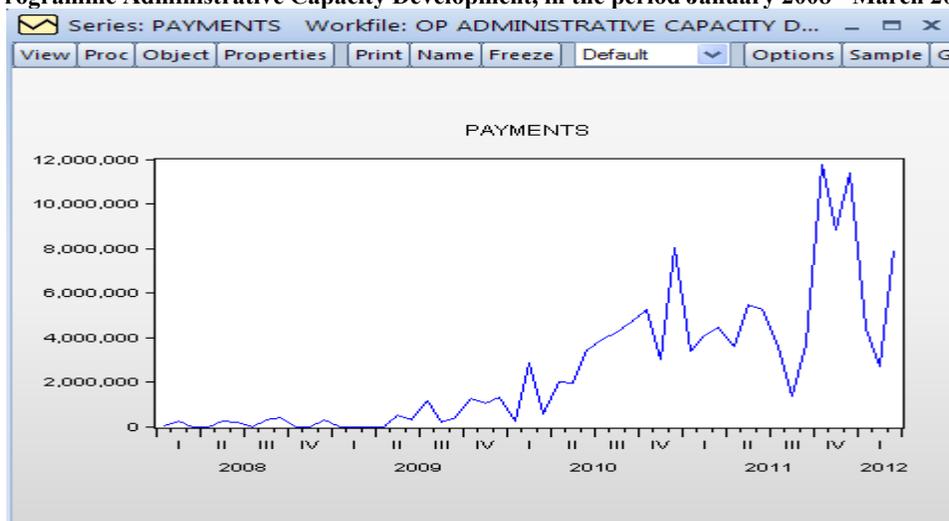
Source: author's processing based on data provided by: Authority for Coordination of Structural Instruments

Observing the great differences that exist between the values of the five variables submitted to the analysis, one could wonder what is not functioning in the process of accessing the grant funds. In order to answer this question, I tested the significance of the dependence existing between the five variables, simultaneously measuring the connection intensity between them, as well by means of a linear model of multiple regression using the spreadsheet program Excel, as well as the informatics program Eviews.

3.1. The analysis of indicator data series related payments to beneficiaries of structural and cohesion funds.

From the next figure we can notice the growth trend for the value of payments made to beneficiaries of structural and cohesion funds in the Operational Programme Administrative Capacity Development for the analyzed period, with a more significant quantitative point of view after 2010.

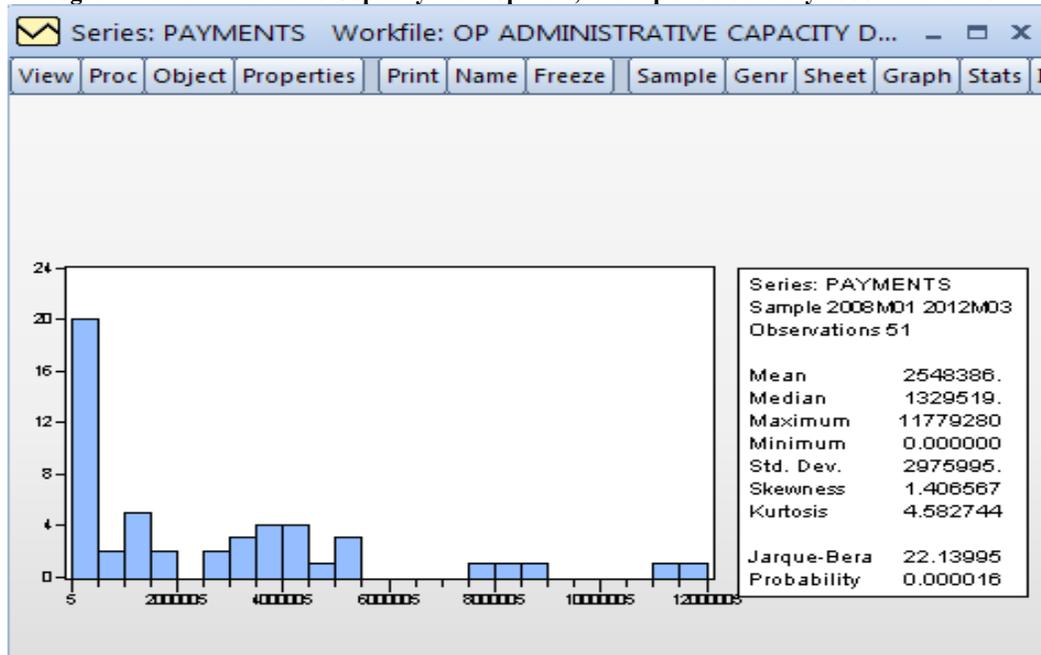
Figure 3: Graph data series on financing investment projects of European funds, the Operational Programme Administrative Capacity Development, in the period January 2008 - March 2012



Source: author's processing based on data provided by: Authority for Coordination of Structural Instruments

Upward trend, but uneven, can be observed by analyzing the descriptive statistics for the data series analyzed in relation to a normal distribution.

Figure 4: Distribution histogram data series on the development value of payments, the Operational Programme Administrative Capacity Development, in the period January 2008 - March 2012



Source: author's processing based on data provided by: Authority for Coordination of Structural Instruments

Following the descriptive statistics analysis were separated the following distribution characteristics:

- mean, an indicator of central tendency that characterizes the average payments made to beneficiaries of structural funds in the Operational Programme Administrative Capacity Development in amount of 2.5 million RON;
- median, value recorded in the middle of the period analyzed, the data series that divides into two equal parts, are at amount of 1.3 million RON;
- extreme values of the period with a maximum of amount 11,8 million RON recorded in October 2011 and a minimum of any RON recorded within nine months (March, April, July, October and November for 2008, and the period January-April 2009);
- Standard deviation of individual values from the mean value: 3 million RON;
- because the coefficient of asymmetry of the data series around its mean (skewness 1.4) recorded a positive value, we conclude that the distribution is asymmetrical at right, valorile extreme fiind situate în dreapta mediei;
- kurtosis = 4.58, shows that the distribution of the data series is a type leptokurtic;
- therefore, Jarque-Bera test, based both on the coefficients skewness and kurtosis, shows that the series of indicator payments is not exactly follow a normal distribution.

3.2. The testing of the connection's intensity and of the dependence significance between the allocations value, the solicited value through the submitted projects, the value of the approved projects, the values of the contracted ones and the absorption capacity, through dispersion analysis (ANOVA)

Given the small proportion of payments in the total projects submitted I suggest the use of the method of simple regression analysis for the verification of the existence of the link between the five indicators, in the period January 2008 - March 2012. Knowing that the regression function means the mathematical relation existing between two, or more, independent variables showing, also indicates, how the resultative parameter y (total value of projects implemented) is modified only after the modification of the values of the independent parameter x (allocations value, total value of projects submitted, total value

of projects approved, total value of projects contracted), other factors, that might influence the phenomenon are considered to have a constant action.

The results obtained by processing the data are:

Table 1: The testing of the connection's intensity and of the dependence significance between the allocations value, the solicited value through the submitted projects, the value of the approved projects, the values of the contracted ones and the absorption capacity, in the period January 2008 - March 2012

<i>Regression Statistics</i>						
Multiple R		0,828223				
R Square		0,685953				
Adjusted R Square		0,658645				
Standard Error		1738743				
Observations		51				

<i>ANOVA</i>						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	4	3,04E+14	7,59E+13	25,11876	4,52E-11	
Residual	46	1,39E+14	3,02E+12			
Total	50	4,43E+14				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	-1664745	554618.3	-3.00161	0.004329	-2781134	-548357
Allocations	0.231202	0.050277	4.598511	3.34E-05	0.129998	0.332405
Submitted projects	0.012	0.00383	3.13273	0.003011	0.004289	0.01971
Approved projects	0.022034	0.006843	3.219836	0.002355	0.008259	0.035808
Contracted projects	-0.00446	0.011575	-0.3853	0.701794	-0.02776	0.018839

Source: author's processing based on data provided by: Authority for Coordination of Structural Instruments

After analyzing these data is found:

- Multiple R = 0.828223, indicates a strong and a positive link between the payments and the four independent variables studied (allocations, submitted projects, approved projects, contracted projects);
- R Square = 68.59% shows how the change in payments is explained by the influence of four independent variables (allocations, submitted projects, approved projects, contracted projects);
- The F test ($F = 25.11$), shows a positive value, which validates the linear regression model describing the relationship between the payment projects and the allocations, the submitted projects, the approved projects and the contracted projects.
- Intercept in the amount of -1,664,745 RON, shows that as the payments could be made given that there were no amounts allocated not submitted any project on any of the axes of funding and obviously had not approved and contracted any project. Because $t Stat = 3.00$ and $P-value = 0.0043$ (less than 0.05), means that this coefficient is significantly (for a probability of about 99.99% > 95%, as has been established initially). In fact, that both the lower and upper confidence interval ($-2,781,134 \leq \beta_0 \leq -548,357$) for this parameter is negative shows that the general community is a significant parameter.

For all that, the coefficient value of contracted projects with a value of -0.00446, show that an increase in contracted projects with a one RON, the payments will decrease by 0,0045 RON. Because $t Stat = 0.3853$ and $P-value$ este 0.7018 (less than 0.05), means that this coefficient is insignificant (for a probability of about 29.82%). In fact, that the lower limit of confidence interval ($-0.02776 \leq \beta_4 \leq 0.018839$) for this program is negative, and the upper limit is positive show that the general community parameter is approximately zero.

3.3. Checking disturbed interdependence in relation to their values.

Because between the payments and the four independent variables studied (allocations, submitted projects, approved projects, contracted projects) there is a strong link, but the parameter value of contracted projects proved to be statistically insignificant, the model can be used in the future to achieve a

predicted value of payments developments within the Operational Programme Administrative Capacity Development.

As a result, next step of this study was to eliminate insignificant variable, that the value of contracted projects, recovery model and verifying the existence errors autocorrelation.

Figure 5: Testing autocorrelation errors, the Operational Programme Administrative Capacity Development, in the period January 2008 - March 2012

Equation: UNTITLED Workfile: OP ADMINISTRATIVE CAPACI..									
View	Proc	Object	Print	Name	Freeze	Estimate	Forecast	Stats	Resids
Dependent Variable: PAYMENTS									
Method: Least Squares									
Date: 04/22/12 Time: 21:52									
Sample: 2008M01 2012M03									
Included observations: 51									
Variable	Coefficient	Std. Error	t-Statistic	Prob.					
TOTAL_ALLOCATIONS	0.222777	0.044862	4.965810	0.0000					
PROJECTS_SUBMITTED	0.012397	0.003656	3.390984	0.0014					
PROJECTS_ALLOCATED	0.021342	0.006543	3.261758	0.0021					
C	-1649137.	548103.1	-3.008808	0.0042					
R-squared	0.684940	Mean dependent var		2548386.					
Adjusted R-squared	0.664830	S.D. dependent var		2975995.					
S.E. of regression	1722920.	Akaike info criterion		31.63212					
Sum squared resid	1.40E+14	Schwarz criterion		31.78364					
Log likelihood	-802.6192	Hannan-Quinn criter.		31.69002					
F-statistic	34.05928	Durbin-Watson stat		1.397466					
Prob(F-statistic)	0.000000								

Source: author's processing based on data provided by: Authority for Coordination of Structural Instruments

Following analysis of results shows that between the payments and the three remaining independent variables in the study (allocations, submitted projects, approved projects) there is a strong link (Multiple R = 0.827611) and 68.94% of the payments is explained on the basis of these independent parameter.

However, neither this time, linear regression model is not properly estimated, although all model parameters were found to be statistically significant, overall model can not be validated due to autocorrelation errors. Since the $d_{calc} = 1.39$, also upper and lower limits of determination range autocorrelation by method Durbin-Watson, for 3 degrees of freedom and the 51 observations are 1.46, respectively 1.63, see that the calculated value is not included in the range $[d_{up}, 4 - d_{up}]$, more precisely between $[2.37; 2.54]$, but between $[0; d_{lower}]$, which indicates the presence of positive autocorrelation of residue values.

4. Conclusions

The used methodologies took into account both a quantitative analysis and especially a qualitative one, regarding at once the amounts allocated from the European Union budget, the solicited amounts through the financing demands that were submitted to the management authorities, the approved amounts following the projects evaluation, the contracted amounts in view of implementing the projects and, last but not least, the payments towards the beneficiaries of the European funds.

The test result led towards the idea that even though the series of data regarding the payments index does not follow a normal repartition, the connection between this endogenous index and the other four exogenous indexes (allocations, total value of the submitted projects, total value of approved projects and total value of the contracted projects) is an extremely powerful one (82.82%). The parameters of the model is proved to be significant from the statistic point of view, fact which was verified through the application of the Student Test, for the significance thresholds that do not have some values close to zero, their significance being guaranteed with a probability that converges towards the maximal probability (the one of certitude). The most significant coefficients proved to be the ones of allocations, of submitted projects and of approved projects. In the case of all five coefficients of the multiple linear regression model, there were confidence intervals estimated, the statistic significance of them being also underlined by the fact that in the case of four coefficients, the inferior and superior limits of confidence intervals have the same sign. Also, as the independent variable contracted projects confidence intervals have not

the same sign and because the positive autocorrelation of residue values is present, this model can not be used in the following period in order to realize a prognosis regarding the evolution of the payments value.

As a consequence, the final conclusion is that we need reliable and realistic projects corroborated with an effective management of European funds. The existence of a powerful institutional structure is necessary, able to assure the formulation and the application of public policies, the deployment of inter-ministerial coordination processes, national programs implementation, the growth of partnerships applications between local administrations and between the private sector and the local administrations. Hopefully, the following programming period of the EU financial support after 2013 will find us with a much more solid project management culture than the one that we have had so far.

5. References

- Florescu, D (2011), *The determinant elements in the process of accesing structural and cohesion fund*. In 18th International Economic Conference – IECS 2011 – Crises after the crisis. Inquiries from a national, european and global perspective. Publisher house Universităţii Lucian Blaga, Sibiu, May, ISBN 978-606-12-0139-6, p. 297- 302.
- Florescu, D (2010), *Operational programmes management the particulars in Romania*, Global Conference on Business and Finance Research, Kailua-Kona, Hawaii, January, ISSN 1941-9589, p. 346-351.
- Florescu, D. (2010), *Determining the connection between the total value of projects submitted and total value of approved into the Sectoral Operational programme of Environment*. In: 17th International Economic Conference – IECS 2010 The Economic World Destiny Crisis and Globalization. Publisher house Universităţii Lucian Blaga, Sibiu, May, ISBN 978-973-739-987-8, p. 266- 273.
- Florescu, D.(2010), *Romania's ability to attract Structural Funds in comparison with other member states of the European Union and determining the connection between the total projects submitted and total projects approved*. in Proceedings –of the 5th International Conference on Business Excellence, Editura Infomarke, Braşov, October, ISBN 978-973-1747-23-1, vol.1, p. 182- 186.
- Socol, C., Socol A. (2006), *European Model: Growth, Convergence and Cohesion*, Theoretical and Applied Economics, 13(8), p. 61-66.
- <http://www.ancs.ro>
- http://ec.europa.eu/regional_policy/sources.htm
- <http://www.eufinantare.info>
- <http://www.fonduri-ue.ro>

ECONOMIC CRISIS – UNDERSTANDING THE CAUSES TO ANALYSE POSSIBLE SOLUTIONS

GAVRILETEA Marius Dan

*Ph. D. Associate Professor, Faculty of Business, Babes-Bolyai University, Cluj-Napoca, Romania
dan.gavriletea@tbs.ubbcluj.ro*

MOGA Aura Carmen

Ph. D. Student, Faculty of Economics and Business Administration, Babes-Bolyai University, Cluj-Napoca, Romania, auramoga@yahoo.com

Abstract: *Economic crisis or recession is our day's dilemma. Analyzing the economic conditions of the global economy through last years, the study analyzes the economic and financial premises that lead the global economy into crisis. The study reveals in the case of Poland, Romania and Hungary, the GDP and the volume of Gross Written Premiums as major indicators of the crisis magnitude, and also the impact of global crisis on the economic environment. In the last part of this study, we analyze the GDP prediction for this year, and also measures that the economies should take in order to avoid the recession.*

Keywords: economic crisis, insurance, causes, solutions

JEL classification: G 22, G 28

1. The bubble burst

All started in 2008, in the US, when the bubble in the subprime mortgage area burst. This was due to multiple factors. All other previous crisis had an impact on the global economy, like in 1997 the collapse of the currencies in East Asia, the 1998 financial crisis in Russia, the US contraction in credit in 2001. But as a general point of view, the United States was always seen as the global economy motor, as a safety market in continue growth. That is way, foreign citizens and states have moved their savings and capital into US, increasing the financial funds. The US absorbed this extra funds, getting in the point where money where easy to obtain, almost too many in relation with the needs. This situation leads to changes in the states policies and deregulation, reducing government regulations of economy. In November 2007, the accounting standards changed and worsen the crisis premises, by introducing "mark to market" asset valuation requirements on capital assets. (Dale R. DeBoer, Ph.D, (2008) *Understanding the Financial Crisis: Origin and Impact.*)

On other important aspect that lead to the crisis, came from the banking sector, where innovative financial products where introduce with rapidity in the last years. This new products did not benefit from sufficient time to develop good policies for risk control, so some risk where underestimated, and the characteristic of the banking system was deregulation.

The factor that did the finally attack was the loan to borrowers who do not qualify in normal risks group, borrowers with lower income or lesser credit history. That's why the demand for housing increased, we faced a boom in the house building sector; the homeowners refinance their loan with a second mortgage, with lower interest rates, to finance their spending. The problem was that the prices for houses were not real, were over stated due to the mortgage bubble, and the expectations from the customers were that the prices will continue to grow. This is the moment where real estate speculators entered the real estate market and contributed to the increasing of the price.

So in 2008, the bubble burst. The market realized the house price is not real; the prices went down, the selling's gone down, the borrowers couldn't pay back the mortgage loans, nor to refinance at more favorable terms. It began a liquidity crisis, a financial crisis at global level, an economic crisis even recession as significant downturn in economic activity.

2. Causes

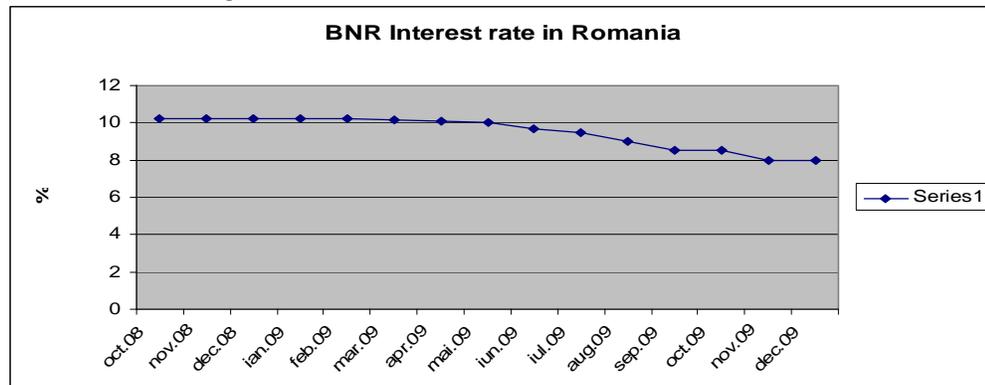
What were the factors that determined the mortgage bubble? This is the question that can discover the motives that led to crisis.

First, the stock market crash in 2000, (usually named "Credit Crunch") determined an increase of the real estate market, which many believed to be a more reliable long term investment. This is true

especially in Romania, where every person wishes to have their own household, as prove to their success. So, the demand for purchasing real estate increased, and it was over estimated with the help of real estate speculators that encourage the market trend and the expectations of the buyers that believed the house price will continue to grow.

Second, the Central Banks cut short-term interest rates to historically low levels, which allowed more people to purchase homes for a lower cost. This kind of monetary policy decisions of Central Banks has produced effects on economy indirectly via commercial banks. Decreasing the BNR-National Bank of Romania- interest rate from 10.25% to 8% in 2009 determined the commercial banks to decrease the rates from 20.7% to 16.8%. In general, lower interest stimulates investments in consumption over savings, while higher savings interest stimulates decreasing short-term consumption and investments.

Figure 1: Central Bank interest rate in Romania



Source: data's from www.bnr.ro

Third, credit rating agencies made up high ratings for the securities based on subprime mortgage loans because they were paid by investment banks, and the deregulation in the financial system was a true help.

Fourth, mortgage brokers did not lend their own money, they did not retained the risk; therefore they encourage the mortgage bubble in order to obtain high incomes for themselves.

Fifth, mortgage lenders had passes the rights and related mortgage risks to third-party investors, corporate, individual and institutional, by securitization. This is way the first effects of the bubble burst affected different areas of the financial and economic market.

Why the bubble burst? Because the house price began to reduce, refinancing became more difficult, interest rates get higher. Borrowers couldn't pay back the mortgage loans and this affected mortgage lenders, banks and financial institutions, retained credit risk and reported major losses, even bankruptcy, beginning with Lehman Brothers, Fannie Mae and Freddie Mac. At global level, the crisis spread to international banks that bought securities based on US subprime mortgages and to international financial markets that have become volatile and vulnerable to the credit contraction.

3. Effects

The confidence in the US economy decline, the confidence in financial institutions all over the world decline as well, pushing buyers out of financial markets.

Financial institutions have been affected greatly, initially by shortage of liquidity in the banking system, by reduce value of assets that lead to fewer loans; banks struggle to renew their competitiveness, mainly by contracting the credit activity, facing tighter regulations. Lower consumer credit affects demand for good and services. As demand falls, unemployment increases, the global economy faces a significant slowdown. The financial system was destroyed, even dough like the economist Joseph Stiglitz says - they are "the brain of the economy" and they will need a lot of time to recover, with major costs supported by tax payers, similar and even bigger then in the case of The Great Depression from 1929. Financial markets have tree important functions in the economy: mobilize savings, management of risks, relocation of capital and the reward is increasing the economy efficiency. They didn't complete those important functions. They acted to obtain theirs self interest that is maximizing profits.

In relation with the financial institutions and risk management, we analyze below the crisis effects in the insurance market, the evolution of the gross written premiums in Romania, Poland and

Hungary. The problems are the same like in financial institutions and in all economy: decline in confidence, liquidity, bankruptcy of firms, losing jobs for individuals. Like every market, the insurance market decreased in this period, from 2008 to 2011 by 12% in Romania, 18% in Poland (but the initial level is way superior to the rests), and 8% in Hungary. Poland insurance market trend (gross written premium) is ascending compared with the other two that are still slowing down and struggling to stop the downturn.

Table 1: Evolution of Gross Written Premium in Hungary, Romania and Poland, in the period 2008-2011

	2008	2009	2010	2011
Gross Written Premium in Hungary - Mn.HUF	892,769	825,924	843,038	821,075
Gross Written Premium in Romania - Thousand RON	8,936,286	8,869,746	8,305,402	7,948,069
Gross Written Premium in Poland - Thousand PLN	38,985,975	30,283,456	31,422,044	31,848,619

Source: data's from www.csa-isc.ro , www.knf.gov.pl, www.pszaf.hu

Figure 2: Evolution of Gross Written Premium in Hungary in the period 2008-2011

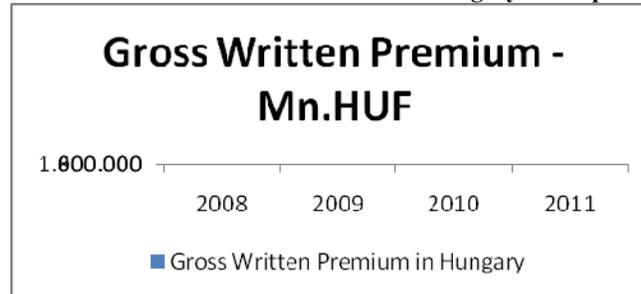


Figure 3: Evolution of Gross Written Premium in Romania in the period 2008-2011

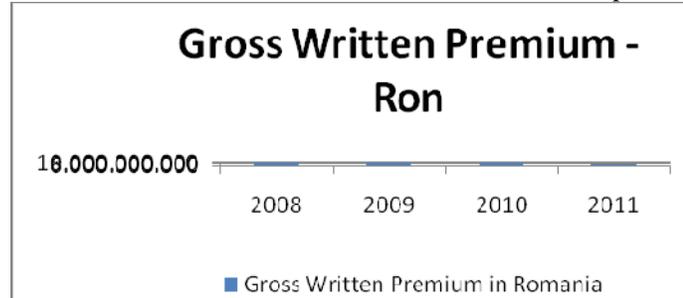
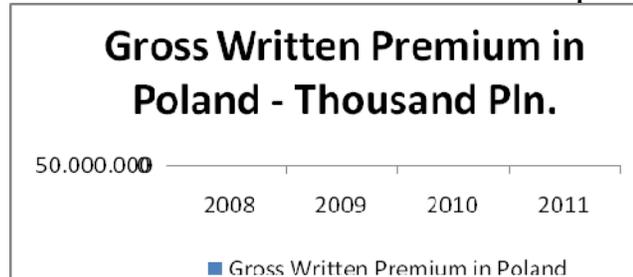


Figure 4: Evolution of Gross Written Premium in Poland in the period 2008-2011



In order to better see the differences in market size we adjusted the values of gross written premiums to euros, for the objective of compared data. The Poland market in 2008 is more than 4 times bigger than Romanian market. This is way in 2009 premiums in Poland (33%) decreased in a higher percentage than the Romanians (14%) and Hungarians (17%), not because the markets was less damaged. In 2010, only the Romanian market did not increase compared with 2009, Poland increase was by 4.44%, and in Hungary by 3.87%. In 2011, compared with 2010, the Poland continues to grow by 0.7%, Hungary

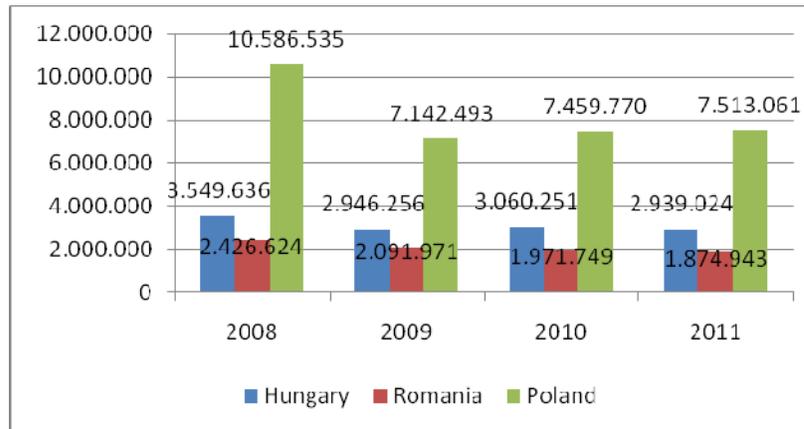
decreased by 4% and Romania continued to decrease by 5%. The conclusion for the Romanian insurance market is that the crisis affected the market even in 2011 (23% decreased in 2011 compared with 2008), and probably it will continue in 2012 too.

Table 2: Evolution of average annual rates in the period 2008-2011 for the currencies of countries surveyed, compared with Eur.

	2008	2009	2010	2011
1 EUR	251.51 HUF	280.33 HUF	275.48 HUF	279.37 HUF
1 EUR	3.5121 PLN	4.3276 PLN	3.9947 PLN	4.1206 PLN
1 EUR	3.6826 RON	4.2399 RON	4.2122 RON	4.2391 RON

Source: data's from Central Banks

Figure 5: Evolution of Gross Written Premium compared in Hungary, Romania and Poland, in the period 2008-2011, in thousand euros



Source: data's from www.csa-isc.ro, www.knf.gov.pl, www.pszaf.hu

Real estate prices are expected to continue declining, as result of fewer buyers, until the surplus homes number is reduced. Now, there is higher offer of households than demand, this is way the price is low, the contractors are struggling to obtain liquidities to survive the crisis. The business developers in the real estate market made mistakes, creating houses in wrong places, or wrong dimensions, to big and to expensive for citizens. This situation lead to a major social problem, lots of people losing their houses, and jobs, as consequence of the firms bankruptcy.

In 2000, the real estate market increased because it was a more reliable investment. In 2008, after the mortgage bubble burst creating panic in financial markets, increased the investments in commodities such as wheat, oil and corn, as "stores of value". This transfer of investment interest determined an increase in world food and commodity prices and a decrease of risky mortgage bonds and shaky equities.

We can better understand the effects of the crisis, by analyzing the evolution of the economy, of the standard of living, at global level and also in different countries, to see what measures were taken, with what results.

4. GDP evolution

The GDP - Gross Domestic Product- is an aggregate measure of national economic activity. It can be expressed in different ways: nominal GDP, real GDP, per capita GDP, income method, expenditure method, GDP at factor cost, GDP at producer price.

The most commune, GDP determined by the expenditure method has four components: personal consumption expenditures (C); private domestic investment (I- for example equipment, construction); net exports (X-M=exports minus imports); and government spending (G).

Equation (1): $GDP = C + I + G + (X - M)$

Real GDP is used to compare GDP from one year to another, by eliminating the effects of inflation or deflation, and we used it in the data below, to analyze the crisis magnitude in Romania compared with Poland, another Eastern European country.

To be more comparable, we use GDP per capita, determined by dividing total GDP by the number of population, that it is often used to measure the standard of living, even though, it is not a measure of personal income. That's way we will use it as an indicator of the crisis magnitude.

When we analyze the data from Romania in the period of 2007-2010, we see that the crisis affected the GDP in 2009, when the crisis strikes. In 2010 it is still a difficult period, but there is an increase in GDP, compared with 2009, the previous year. In Poland, the beginning of the slowdown of the economy is sooner, in 2008, when the GDP slows down by 1%. In 2009, manage to maintain the growing trend, avoiding the crisis and the recession (small increase, but at least is not negative like for our country) and in 2010 the percent for increasing in GDP is triple comparing with Romania. (See data in Table 1 and trend in graphic 2).

The cause for this situation is due to the measures that Poland took to adjust and face the crisis. (See arguments in 5. Future perspectives).

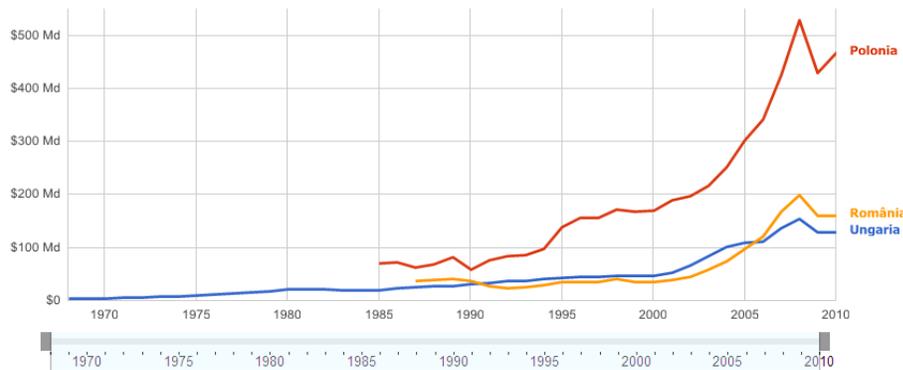
Table 3: GDP per capita growth-% in Romania, Poland and Hungary period 2007-2010

Year	GDP per capita growth-% Poland	GDP per capita growth-% Hungary	GDP per capita growth-% Romania
2007	6.8	0.3	6.20
2008	5.1	1.1	9.60
2009	1.5	-6.7	-8.4
2010	3.9	1.5	1.10

Source: data's from www.worldbank.com

If we talk about future perspective for GDP, the International Monetary Fond estimates an economic growth for 2012 in Romania, for about 2% from initial estimation of 3.5%, lower than the minimum value of 3% for complying with the Maastricht conditions for Euro community, for which Romanian authorities maintain the 2015 objective.

Figure 6: GDP compared for Romania, Poland and Hungary



Source: data's from worldbank, on www.google.com

But there are specialists that criticize the importance of GDP in economic analysis. The economist Frank Shostak has argued that “GDP is an empty abstraction devoid of any link to the real world, and, therefore, has little or no value in economic analysis” (Frank Shostak. -*What is up with the GDP?*).

5. Measures and future perspectives

Future and present generations all over the globe face a significant tax burden increase, as a response to the financial crisis. The fiscal field response to the crisis is oriented in two sectors: fiscal expansion and on tax incentives. Fiscal expansion makes sense as a crisis-response device: it can be narrowly targeted, for example at low-skill jobs. The most obvious fiscal expansion is for infrastructure projects - these can create jobs and are highly visible, thus generating a sense that the government is being responsive.

Performant tax system should not exist just to collect enough money, but also to develop the base of future taxation, to stimulate the economy, and a stable business environment.

The consumption is another aspect that we should analyze, in order to understand the crisis and to find solutions for the future. At first, the excessive consumption has led to crisis and now we are looking for solutions to encourage the consumption, as solution for increasing the economic activity at national and global level.

If we have an exacerbate consumption, it can lead to situation when buyers can not pay for what they purchased, to financial block outs, inclusive bankruptcy to firms, individuals or countries.

If the level of consumption is low, the economic activity is contracting, is getting into recession and the effect is similar, bankruptcy. The cause is the difference between the demand for a certain product (low), and the offer for it. Without buyers, a firm can not survive. Without revenues, a firm or even a country, try to obtain credit from business partners, banks, financial institutions, with bigger cost, gets deep in debts, and impossibility of paying back.

The solution is to maintain the consumption under control, at a normal level, but at the same time, to let the economic market free to obtain the balance point for it's one. So the state institutions, financial supervisors, at national and global level, have to aid the market, but not suffocate it, with financial measures, fiscal policy, and monetary policy.

Most countries responded to the crisis by cutting down costs, relocation of capital, spending their resources on infrastructure projects, trying to reestablish the confidence in the market, in financial institutions, offering financial guaranties, even buying assets from big and important firms with big problems, in order to give a positive impulse to the economy.

But to transfer risky assets from financial institutions to government, it is a risky action, for two reasons:

- First, it might lead to increased costs if the assets prices continue to decline, with possible no effects on the financial institution or
- Second, the optimistic case that it will determine the desired effect of putting the financial market on the right way. But it is nor entirely a good thing because it might create a bad habit of neglecting the risk and it's effects in the idea that the government will come and save the financial institution with no repercussions, situation that will lead to more crisis in the future.

Poland is considered as a good example of reactions from authorities, by increasing the absorption of European Union funds for infrastructure projects and avoiding the economic downturn. This is not the case for Romania, where the absorption of EU funds decreased in the crisis years, where the problems with the funds already absorbed are higher, and put in danger the future absorption and allocation from the Community.

The crisis effects on consumers and businesses continue as credit becomes less available. Year by year the global economy is becoming more complex, more interrelated, more difficult to manage at a local level, more difficult to control and estimate possible reactions at different factors.

Even dough, over last decade the economy suffered from the effects of different crisis, located all over the world - like 1997 the collapse of the currencies in East Asia, the 1998 financial crisis in Russia, the US terrorist attacks and contraction in credit in 2001, 2007 decrease in Shanghai Stock Exchange, 2008 real estate bubble burst in US, 2010 debt crisis in Europe- Greece, Spain, Portugal - we don't know what future brings. All we should know is that the financial market needs a better risk management, a better risk control.

So the ultimate questions are:

1. Did we learn something from all this crisis situations? We can estimate the future or to identify the conditions that can lead to future crisis and eliminate them? It was hard to predict the exact day, but some important economists saw the imminence of the 2008 crisis and consider that the measures took by financial regulatory institutions, state authorities where to blame – the bailouts determined loose of confidence in the economy in general; the banks did not manage risks, they created risks by derivatives (“time bombs, financial weapons of masse destruction” according to Warren Buffet opinion in 2002) products that enhance the risks and in the end all this determined not only a financial and economic crisis, but also a social crisis, with lots of people losing their homes. (Joseph Stiglitz- *Foundation Day Lecture*)

2. How long it will take the market to overcome the crisis effects, helped or not by states measures, international institutions programs, new regulations, innovations in financial field or in economy in general?

6. References

- Dale R. DeBoer, Ph.D, Department of Economics, CU-Colorado Springs, Junior Achievement (2008) *Understanding the Financial Crisis: Origin and Impact*. Available at: http://www.ja.org/nested/bayarea/fin_lit_white_paper_educator_version.pdf.
- Stiglitz lecture on financial crisis-*Foundation Day Lecture*. Available at: <http://manchester.ac/aboutus/news/archive/list/item/?id=4052&year=2008&month=10>.
- Shostak. Frank, *What is up with the GDP?* Available at: <http://mises.org/daily/770>
- <http://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG/countries/all?display=default>
- <http://www.mabisz.hu/images/stories/docs-eng/publications/quarter/2011-i-iv-quarter.pdf>
- http://translate.google.ro/translate?hl=ro&langpair=en%7Cro&u=http://sdw.ecb.europa.eu/quickview.do%3FSERIES_KEY%3D120.EXR.A.ron.EUR.SP00.A
- http://translate.google.ro/translate?hl=ro&langpair=en%7Cro&u=http://sdw.ecb.europa.eu/quickview.do%3FSERIES_KEY%3D120.EXR.A.pln.EUR.SP00.A
- http://translate.google.ro/translate?hl=ro&langpair=en%7Cro&u=http://sdw.ecb.europa.eu/quickview.do%3FSERIES_KEY%3D120.EXR.A.HUF.EUR.SP00.A
- http://csa-isc.ro/index.php?option=com_content&view=article&id=70&Itemid=77&lang=ro
- http://www.knf.gov.pl/en/about_the_market/Insurance/Financial_and_statistical_data/Quarterly_data/Archive.html
- http://www.pszaf.hu/en/left_menu/pszafen_publication/pszafen_reports

THE INTENSITY OF LIBERALIZATION

GHERMAN Mircea-Cristian

*Ph. D. Student, Technical University of Cluj-Napoca, Cluj-Napoca, Romania,
mircea-cristian.gherman@univ-orleans.fr*

CIUPAC-ULICI Maria-Lenuța

Ph. D. Associate Professor, Commercial Academy Foundation, Romania, ulici_maria@yahoo.com

COMAN Alexandru

Ph. D. Student, Babes-Bolyai University, Cluj Napoca, Romania, alexincom@freenet.de

Abstract: *Reform of financial liberalization is a complex and long term phenomena. This implies that the impact of this reform on financial markets should not be immediate, but rather gradually over a long period. It is also important to note that liberalization does not occur in the same way on all markets. Each country, according to his calculations on the economic climate and the specific of financial markets, has differently set its progress in liberalization process. In this article we propose to measure the intensity of liberalization using the method proposed by Bekaert (1995). Therefore we measured the intensity in five stock markets (Czech Republic, Hungary, Poland, Russia and Turkey) during the period February 7, 1997 - 25 July 2008. Also, we tried to see if the official date of stock market liberalization is the date identified by structural break test called Zivot - Andrews test.*

Key words: stock market liberalization, index, intensity, structural breaks.

JEL classification: N 24, C 87

1. Introduction

During the '70s, while promoting liberalization policies of capital flows by conservative governments, in U.S. and England were dismantled barriers to free movement of international financial flows. In a short time, the U.S. measures were copied by the Commonwealth countries, followed by Western European countries and Latin America countries. Thus began a new decade of gradual integration of countries in the international financial system.

Steps, that have to follow different countries during the liberalization process of economies, have been different. Even among the most powerful capitalist states there were differences in terms of their integration into global financial markets.

International experience reveals that the existence of a certain control on capital flow implies a higher cost of borrowed capital by domestic firms. This increase in cost of credit is due, that the restrictions imposed on the capital account do not allow equalization of rentability of domestic market with the international market. However, there are restrictions on capital outflows which can prevent repatriation of profits or dividends for multinational companies, which discourages foreign investors.

Trends to liberalize the international financial system have been particularly promoted by the International Monetary Fund policy. According to the IMF Statute, the countries - members are able to call on financial resources. Thus, the IMF encourages, by providing loan funds, policies to achieve freely convertible currency, foreign trade liberalization and facilitation of international capital movements (Article VIII of the IMF Statute).

Generalizing the approach of financial liberalization in the view of various economists, we conclude that successful liberalization of the economy depends on the proper procedure planning reforms promoted by the state authorities. Thus, from the financial literature, we drew the following axioms of principles to promote financial liberalization:

- Procedure of financial liberalization is better integrated into sustainable macroeconomic policies;
- Priority should be given to monetary and exchange rate policies, which provided support to macroeconomic stability. Thus, a special role is given to monetary authority, which by the reforms promoted can develop appropriate instruments of monetary policy, thus influencing the development of an increase trend of foreign exchange and money markets.
- Sequence of financial liberalization and economic development policies of an economy must be realized such as to reflect the hierarchy and the integrity of economic sectors with functional

institutional structures in this system. However, economic development policies must be comprehensive, ensuring connectivity between different sectors of the economy;

- Stock market development requires accurate measures of succession, in order to mitigate risks. Economic development policies must be accompanied by prudent measures and macroeconomic surveillance in order to reduce risks introduced in the domestic financial system by new financial instruments, as well as those used by resident institutions to operate on foreign financial markets;
- Rhythm of reform must consider the initial financial conditions and security of financial and non financial institutions, respectively the necessary time for their restructuring;
- Institutional development is a crucial element in the development process of stock markets and the management capacity of financial risk. Thus, the creation of appropriate management structures within financial institutions, which would include internal controls system and management risk should be prioritized in the process of economic reforms;
- Reforms that require long implementation must be applied early.

Before proceeding to the procedure of financial liberalization, particular attention must be given to efficiency existing controls on capital, macroeconomic climate stability and consistency of macroeconomic policies, regulatory and prudential framework, level of development of the banking and financial system, respectively the ability of financial and non financial corporations to manage shocks and risks that may arise. An efficient liberalization requires reforms in monetary and financial sectors and their policies should focus on improving internal management of financial institutions, the increase of liquidity on financial markets and promoting disciplinary rule.

2. Stock market liberalization intensity

Henry (2000), Bekaert & Harvey (2000) and Kim and Single (2000) states that "financial liberalization is not determined by a single event, but by a succession of events".

Measuring the intensity of financial liberalization process is of great interest to investors, since they can understand the degree of market openness in emerging countries. The most important thing to note is that the intensity of liberalization is not the same for all emerging countries, because each of them has differently liberalized their stock markets. Factors that may influence the authorities' decision include, primarily, those related to the country's economic situation, financial conditions (increase or decrease of markets) and political climate. As discussed above, some countries prefer to encourage direct access to markets through deregulation, while other countries are trying to create indirectly access by allowing investment funds and ADRs (American Depositary Receipts). Therefore, specific factors to each country, involving different behaviors in managing financial liberalization will significantly affect the intensity of liberalization.

Various methods of measuring the intensity of liberalization have been proposed. This not only allows us to know where we stand in terms of financial liberalization, but also allows explaining changes in market indicators during different stages of liberalization. In the financial literature, there are some methods for measuring the intensity of liberalization. For example, International Financial Corporation (IFC) has sought to build indices to measure the intensity of liberalization in order to capture the liberalization regime and the repression of emerging markets. Also, the International Monetary Fund (IMF) has tried to build this type of indicator, based on information on the control of international capital transactions.

In finance, often is cited the method proposed by Bekaert (1995) regarding the concerns about the intensity of liberalization. Construction indicator is based on eligible indices of IFC. Thus, for each emerging market, the indicator (investment rate = IR_{it}) is constructed by dividing market capitalization of investment index S & P / IFC Investable Index to global index S & P / IFC as follows:

$$IR_{it} = \frac{MC_{it}^{IFCI}}{MC_{it}^{IFCG}}; \quad (1)$$

where:

MC = market capitalization at time t of the two indices for each emerging market previously considered;

S & P / IFCG = total market capitalization of the domestic market;

S & P / IFCI = percentage of the national market, which is legally available to foreign investors.

An investment rate equal to one indicates that the related emerging markets are fully liberalized. However, if the market is completely closed to foreign investors, the rate will be zero. The investment rate reflects only the evolution of market deregulation reforms, because it is based on the theoretical level of foreign participation. Edison and Warnock (2003) attempts to measure the intensity of controls on capital flows by deducting the investment rate of Bekaert (1995) of value one. New value obtained is in the range [0,1], where zero reflects an open market with a low capital control and a value of one indicating a market with a high degree of control over the capital. We observe that the openness of a market is specific to each market. However, in all cases, removing the financial constraints is gradually come to be fully completed in the late 1990s. The official decision of liberalization in Brazil coincided with a sudden change in intensity value of liberalization (it increased in a short period from 19.98% in 1991-57% in June 1991). It was not the case in other markets.

Kaminsky and Schmukler (2003) propose another method for measuring restrictions on capital, based on the experience of 28 countries analyzed in the period 1973 to 1999. Information collected covers three types of financial liberalization: liberalization of capital (loans, control on exchange rate and conditions on capital outflows), financial sector liberalization (settlement of interest rate and foreign currency deposits) and stock market liberalization (offers residents the opportunity to buy or sell securities on the domestic market and to repatriate capital and dividends and interest). New indicator recognizes three different regimes: the value of 1 indicates full liberalization, partial liberalization reflects the value 2 and value 3 represents a complete repression. The empirical results of the study shows a decreasing trend in measures of repression for a sample of 14 emerging markets in the 1990s. However, liberalization is not yet complete.

Another more complicated as to be mentioned is that of Bekaert and Harvey (1995). In their evaluation model, the authors suppose that the degree of financial integration makes changes over time, when a market change over from the segmented state to integrated state system. The dynamics of the integration level is modeled according to the importance of time variation, which applies to the conditional covariance between an emerging market returns and a global market returns (global systematic risk), respectively conditional variance of returns on domestic market (local systematic risk). Exchanges between the segmentation and integration regime are governed by transition probabilities, whose dynamics depend on the specific information variables of considered emerging markets (market capitalization as a percentage of GDP and dividend yield). The empirical results confirm the pattern of variation time of global market integration under the effects of financial liberalization.

To measure the intensity of liberalization, we used the method proposed by Bekaert (1995). Therefore we measured the intensity of capital markets in five countries (table 1) during the period February 7, 1997 - 25 July 2008. We used weekly closing data analyzed indexes. Thus for each index we obtained a total of 588 observations. All closing values of these indices are collected from Datastream database and are denominated in U.S. dollars.

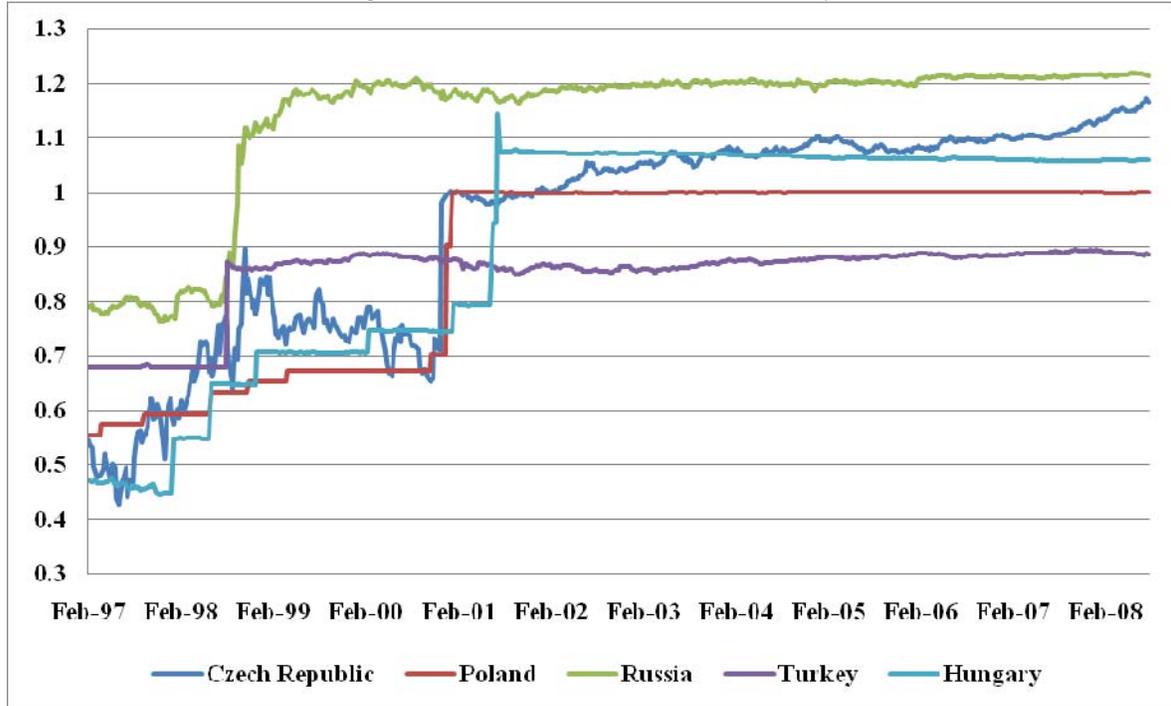
Table 1: Official stock market liberalization date of analyzes countries

Country	Official stock market liberalization date	First ADR introduction
Czech Republic	January 2001	June 1995 (Company=KOMERCNI BANK 144A, Exchange=PORTAL)
Hungary	July 2001	June 1992 (Company=FOTEX RT, Exchange=OTC)
Poland	January 2001	February 1997 (Company=MOSTOSTAL EXPORT CORP., Exchange=OTC)
Russia	September 1998	December 1994 (Company=SUN INTERBREW CLASS B - 144A, Exchange=PORTAL)
Turkey	August 1989	July 1990 (Company=NET HOLDING INC., Exchange=OTC)

Source: http://www.duke.edu/~charvey/Country_risk/couindex.htm

Figure 1 presents the investment rates for each analyzed stock market .It finds that in the related period of liberalization, the investment rate tends to increase, approaching to the value of one.For stock markets in Czech Republic, Hungary and Russia, the value of the investment rate is higher then one,but the stock market iin Poland has a value of investment rate equal to one, indicating that these markets are fully liberalized. Capital market in Turkey has a value less than unity (about 0.9), indicating that this market is not fully liberalized.

Figure 1: Stock market liberalization intensity



Source: Author’s calculations

3. Does structural breaks detect stock market liberalization?

To see if the structural break date coincides with the official date of stock market liberalization, we applied Zivot - Andrews test.

A common problem testing conventional unit root test, the ADF and PP, is that these tests do not allow the existence of structural breaks. Assuming when rupture occurs as an endogenous phenomenon, Perron showed that the power to reject a unit root decreases when the stationary alternative is true and structural failure is omitted. Zivot and Andrews (1992) have proposed a variation of Perron's initial test, they assumed that the exact moment in which the structural break happens is unknown. Thus to determine the breaking points it is used an algorithm which is dependent of data as a proxy for Perron's subjective procedure. Following the characterization made by Perron for structural break framework, Zivot and Andrews continued with three models to test the unit root:

Model A that allows one change over time in the series

$$\Delta Y_t = c + \alpha Y_{t-1} + \beta t + \gamma DU_t + \sum_{j=1}^k d_j \Delta Y_{t-j} + \varepsilon_t \tag{2}$$

Model B that allows a single change in the slope related to trend function

$$\Delta Y_t = c + \alpha Y_{t-1} + \beta t + \theta DT_t + \sum_{j=1}^k d_j \Delta Y_{t-j} + \varepsilon_t \tag{3}$$

Model C combines changes over time in both level and slope in the function corresponding to trend series

$$\Delta Y_t = c + \alpha Y_{t-1} + \beta t + \theta DU_t + \gamma DT_t + \sum_{j=1}^k d_j \Delta Y_{t-j} + \varepsilon_t \tag{4}$$

Where:

DU_t - Adummyvariable for a change in the average which appears on every possible break date (T_B)
 DT_t - variable corresponding to change in trend.
 Thus we have:

$$DU_t = \begin{cases} 1, t > TB \\ 0, t \leq TB \end{cases} \quad (5)$$

$$DT_t = \begin{cases} t - TB, t > TB \\ 0, t \leq TB \end{cases}$$

Assumptions related to the three models of Zivot-Andrews test:

$H_0: \alpha = 0$ (which implies that the series Y_t contains a unit root with an amendment that includes any structural break);

$H_1: \alpha < 0$ (which implies that the series is a stationary process with trend and shows a structural break that occurs at a time unknown).

Zivot - Andrews test looks every point as a potential breaking point in the data (T_B) and set one regression for each sequence possible data break. From all possible breakpoints (T_B), the procedure selects as a breaking point date the date (\bar{T}_B) that minimizes unilateral t-statistic for testing $\hat{\alpha} = \alpha - 1 = 1$. According to Zivot and Andrews, the presence of the final points causes the asymptotic distribution of statistics to diverge to infinity.

Zivot-Andrews test was applied to the logarithmic series of indexes S & P / IFC Investable Index and S & P / IFC Global index related to analyzed stock markets from the previous section. Table 2 shows descriptive statistics of the analyzed indexes.

Table 2: Descriptive statistics

Indices	Mean	Median	Max.	Min.	Std. Dev.	Skewness	Kurtosis	Jarque -Bera	Probab.
S&P / IFCG Czech Republic	97.248	64.88	246.45	33.69	61.224	1.034422	2.55780	109.65	0
S&P / IFCG Hungary	343.23	216.52	921.74	106.52	225.03	0.919	2.34644	93.231	0
S&P / IFCG Poland	872.55	659.75	2247.75	364.54	489.94	1.247484	3.24671	154.00	0
S&P / IFCG Russia	1024.3	560.65	3601.9	38.94	999.18	1.127899	2.81360	125.52	0
S&P / IFCG Turkey	714.33	595.80	1877.61	189.17	395.09	0.878605	2.96201	75.68	0
S&P / IFCI Czech Republic	145.88	67.44	551.00	32.98	135.81	1.376983	3.74306	199.33	0
S&P / IFCI Hungary	505.95	314.64	1365.36	154.15	336.25	0.907347	2.31062	92.324	0
S&P / IFCI Poland	873.17	661.50	2244.78	363.74	489.25	1.243054	3.23977	152.83	0
S&P / IFCI Russia	248.99	144.04	822.58	10.99	220.45	1.080156	2.76868	115.65	0
S&P / IFCI Turkey	322.01	268.22	848.95	85.79	177.70	0.886809	2.99490	77.070	0

Source: Author's calculation in Eviews

Note that the mean return series are positive in all markets examined, at the extremes being placed the stock market in Poland, respectively Czech Republic. The first argument that returns do not follow the law of normal distribution is given by the coefficient of Kurtosis: it presents higher values of 3 for indices S & P / IFCG Poland, S & P / IFCI Czech Republic and the S & P / IFCI Poland (which means that the distribution is leptokurtic, which is much less sharp than the normal distribution) and lower values of 3 for the other analyzed indices (they have a distribution platikurtic). Another argument is

provided by the asymmetry coefficient (Skeweness) that is different from zero which indicates a left asymmetry (except Czech Republic), ie the left side tail is longer. The third argument, that the distributions of weekly stock market returns do not follow a normal distribution law is given by the value of Jarque-Bera test.

Of the three models of Zivot-Andrews test we chose the model C (model with a break in the constant and trend). Table 3 shows the values of Zivot-Andrews test. The critical values of this test, respectively model C are: -5.57 (significance level of 1%), -5.08 (significance level of 5%) and -4.82 (significance level of 10%). None of the analyzed series generate significant amounts of t statistics in relation to critical values, which means that is accepted the null hypothesis of nonstationary (except for the S & P / IFCI Czech Republic). The structural break date identified by the test does not coincide with the date of liberalization process related to stock market indices in Hungary, Poland and Turkey. For related indices from Czech and Russian stock markets, the date identified by Zivot-Andrews test appears shortly after the official date of liberalization.

Table 1: Zivot-Andrews' results

Indices	t-stat	Structural break date
S&P / IFCG Czech Republic	-3.82034	22 September, 2000
S&P / IFCG Hungary	-4.08501	9 June, 2000
S&P / IFCG Poland	-4.63983	01 June, 2001
S&P / IFCG Russia	-4.18112	5 February, 1999
S&P / IFCG Turkey	-4.42232	3 November, 2000
S&P / IFCI Czech Republic	-5.35298*	2 February, 2001
S&P / IFCI Hungary	-4.03295	9 June, 2000
S&P / IFCI Poland	-4.67159	01 June, 2001
S&P / IFCI Russia	-4.50477	5 February, 1999
S&P / IFCI Turkey	-4.42476	19 January, 2001

Source: Author's calculation in WinRats

4. Conclusions

Since the liberalization of stock markets in the mid 1980s, there was the hope that the presence of foreign investors, leading to liquidity and transparency of markets and ensures competition prices, will increase informational efficiency.

Bekaert's method to measure the intensity of stock market liberalization is successfully used. The investability rate increases over time and jumps to the value of one. In each case, a major regulatory reform is associated with a significant increase in the investability rate. After the implementation of liberalization process all the market become fully liberalized.

Zivot – Andrews test was applied to see if the structural break date coincides with the official date of stock market liberalization. The break date identified by the test does not coincide exactly with the liberalization process for any of the related stock market analyzed indices.

5. References

- Bekaert, G. (1995), Market Integration and Investment Barriers in Emerging Equity Markets, *The World Bank Economic Review*, vol. 9, issue 1: 75-107
- Bekaert, G. & Harvey, C.R. (1995), Time-Varying World Market Integration, *Journal of Finance*, vol. 50, issue 2: 403-444
- Bekaert, G. & Harvey, C.R. (2000), Foreign speculators and emerging equity markets, *The Journal of Finance*, vol. 55, issue 2: 565-613
- Edison, H.J. & Warnock, F.E. (2003), A simple measure of the intensity of capital controls, *Journal of Empirical Finance*, vol. 10, issue 1-2: 81– 103
- Henry, P.B. (2000), Stock market liberalization, economic reform and emerging market equity prices, *The Journal of Finance*, vol. 55, issue 2: 529-563
- Kaminsky, G.L. & Schmukler, S.L. (2003), Short-Run Pain, Long-Run Gain: The Effects of Financial Liberalization, *IMF Working Paper*, 59 pages
- Kim, E.H. & Singal, V. (2000), Stock market openings: experience of emerging economies, *Journal of Business*, vol. 73, issue 1: 25-66

- Zivot, E. & Andrews, D.W.K. (1992), Further Evidence on the Great Crash, the Oil-Price Shock, and the Unit-Root Hypothesis, *Journal of Business & Economic Statistics*, Vol. 10, No. 3: 251-270
- <http://banker.thomsonib.com/>
- http://www.duke.edu/~charvey/Country_risk/couindex.htm

ANALYSIS OF LOANS TO HOUSEHOLDS FOR HOUSE PURCHASE IN ROMANIA

GIBESCU Octavia Maria

Ph. D. Assistant Professor, Faculty of Financial Management, University for Finance and Banking, Bucharest, Romania, octavia.gibescu@yahoo.com

Abstract: *Starting with 2007, global economy was marred by tensions, following the US sub-prime mortgage crisis. Romanian banks do not face exposures generated by the financial instruments that lie at the root of the global financial market turmoil; yet, the turbulence on these markets may affect the stability of the Romanian financial system. In this context, the present study endeavours to identify and explain evolution of the loans to households for house purchase in Romania in function of interest rate and earnings, watching how these variables are correlated. The conclusions of the research subscribe to a complex relationship between the indicators, the results are very heterogeneous from one year to another.*

Key words: loans to households for house purchase, earnings, average interest rate for housing loans, casualty

JEL classification: E 00, E 24, E 43, E 51, E 59

1. Introduction

In 2007, the banking sector, which is the pivotal element of the Romanian financial system, showed developments similar to those observed in prior years: strong growth of financial intermediation bolstered by both demand and supply. In the effort of gaining a bigger market share, credit institutions kept boosting their lending activity even after the onset of the global financial turmoil.

In the context of the global financial crisis, in 2008, Romania's banking system shifted from aggressive lending in 2008 Q1-Q3 to a considerable slowdown of credit growth rate and to promotions aimed at attracting deposits in Q4.

The worsening of the economic environment in 2009 left its mark on the Romanian banking system as well, thus, in 2009, banking business slowed down and the discontinuation of the upward trend in lending.

Given the persistent uncertainties surrounding economic developments, the signs of a recovery in lending were inconclusive during 2010. Banks further exhibited a wary behaviour in granting new loans, as they opted for refinancing of the loans in progress.

Starting May 2011, lending saw a revival as shown by the monthly changes in loans to the private sector as a result of the larger volume of new business. The conditions favourable to this development were: the cut in interest rates on new leu-denominated loans, the slight easing of lending standards¹⁵, and the relative improved perception on economic recovery.

The effect of the crisis, in Romanian's banking system was different on the demand side. So, the loans to households for house purchase were depressed differently, from year to year by:

- a) the contraction in household income, as well as the lingering uncertainties surrounding the level of such income in the period ahead;
- b) average interest rate for housing loans

To analyze the impact of net nominal earning and the average interest rate for housing loans in a year on the loans to households for house purchase in Romania, a series of statistical connection analysis methods are applied: correlation, correlation coefficient, determination coefficient and linear regression.

The monthly data are offered by National Bank of Romania and National Institute of Statistics for the period 2007-2011.

The variables used in the analysis are:

- loans to households for house purchase in lei and in euro, for what was verified the correlation as dependent variable;
- the nominal earning and average interest rate for housing loans in lei and in euro, as independent variables.

2. Analysis of main factors that influence the loan to household for house purchase

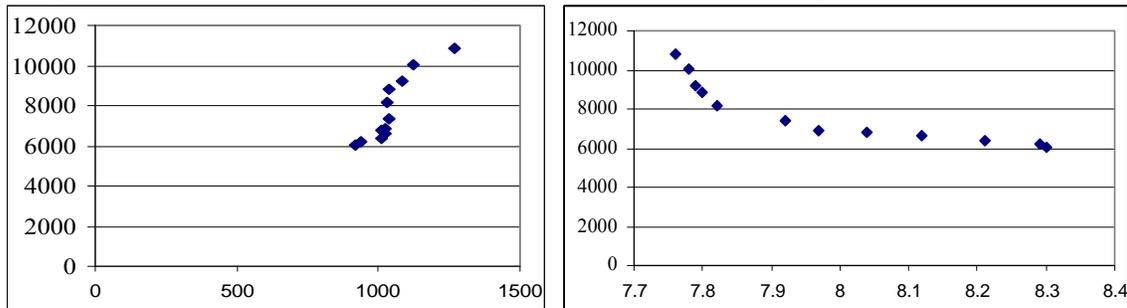
During the year 2007, earning fluctuations are registered being mainly determined by granting the 13th salary and the holidays bonuses (December, March/April). Analyzing data for Table 1, recorded a decreasing of average interest rate for housing loans both in lei and euro, during all over 2007.

Table 1: Housing loans, Earnings and Average Interest Rates for Housing Loans, in 2007

2007	Net nominal earning (lei)	Average interest rate for housing loans in euro, outstanding amounts (% p.a.)	Loans to households for house purchase in euro (lei million, end period)	Average interest rate for housing loans in lei, outstanding amounts (% p.a.)	Loans to households for house purchase in lei (lei million, end period)
January	918	8,30	6025	10,83	1123,3
February	941	8,29	6186	10,87	1123,3
March	1013	8,21	6407	10,82	1156,0
April	1027	8,12	6618	10,69	1187,6
May	1012	8,04	6772	10,72	1194,3
June	1023	7,97	6852	10,63	1213,8
July	1040	7,92	7363	10,48	1237,0
August	1030	7,82	8193	10,37	1263,4
September	1040	7,80	8850	10,19	1312,2
October	1084	7,79	9186	10,09	1367,3
November	1121	7,78	10073	10,04	1414,9
December	1266	7,76	10838	9,97	1462,2

Source: National Bank of Romania – Monthly Bulletins no.1, 2008; National Institute of Statistics – Earnings

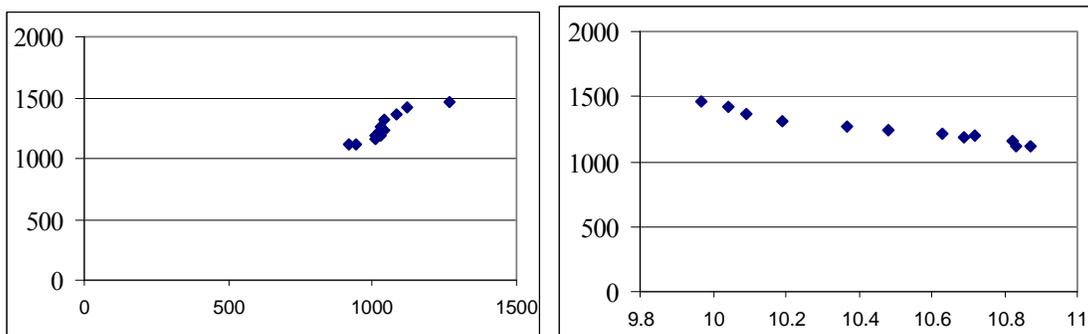
Figure 1: The correlation between housing loans in euro and earnings, respectively interest rate, in 2007



Source: National Bank of Romania – Monthly Bulletins no.1, 2008; National Institute of Statistics – Earnings

Making reference to loans to households in lei, the correlation coefficient shows the same evolution of the indicators, but a stronger connection of them (0,910352 for earnings, respectively -0,98052 for interest rate).

Figure 2: The correlation between housing loans in lei and earnings, respectively interest rate, in 2007



Source: National Bank of Romania – Monthly Bulletins no.1, 2008; National Institute of Statistics – Earnings

Using this data, applying the correlation coefficients are obtained the following results:

- between loans to households for house purchase in *euro* and earnings is a linear positive relationship, as its value is approaching the 1 value (0,889954);
- between loans to households for house purchase in *euro* and average interest rate for housing loans in *euro* is a linear negative relationship between two variables is inversely proportional (-0,88323).

In these conditions was manifested a favourable development of the housing loans because of: a) larger household income and optimistic prospects thereon and b) reduction in the cost of credit (decline in interest rate on *euro* loans to households).

Analyzing the data presented in Table 2, the following conclusion are drawn:

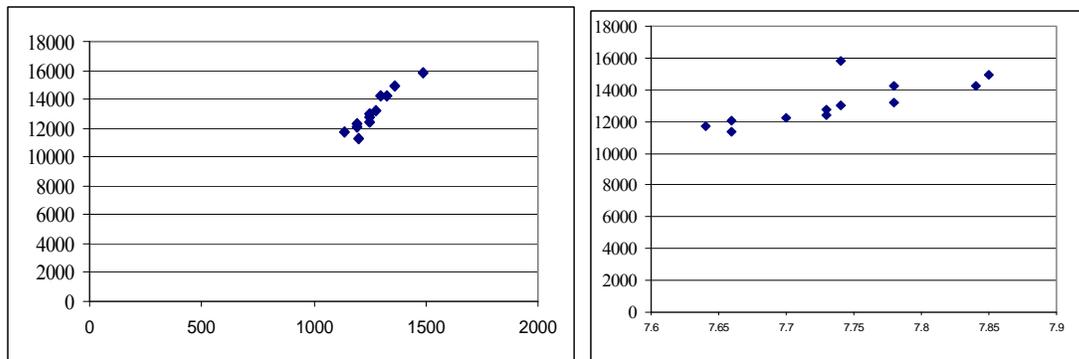
- the same development of the growth rate of net wage;
- but, average interest rate of housing loans increased due to monetary policy objective (a rise in the inflation rate caused a rise in the monetary policy rate).

Table 2: Housing loans, Earnings and Average Interest Rates for Housing Loans, in 2008

2008	Net nominal earning (lei)	Average interest rate for housing loans in <i>euro</i> , outstanding amounts (% p.a.)	Loans to households for house purchase in <i>euro</i> (lei million, end period)	Average interest rate for housing loans in <i>lei</i> , outstanding amounts (% p.a.)	Loans to households for house purchase in <i>lei</i> (lei million, end period)
January	1200	7,66	11329	9,82	1475
February	1134	7,64	11713	9,98	1501
March	1192	7,66	12067	10,21	1534
April	1192	7,70	12248	10,23	1552
May	1248	7,73	12424	10,30	1568
June	1248	7,74	13041	10,31	1567
July	1248	7,73	12761	10,34	1574
August	1277	7,78	13183	10,32	1590
September	1296	7,78	14284	10,36	1604
October	1327	7,84	14275	10,51	1629
November	1361	7,85	14919	10,49	1638
December	1489	7,74	15826	10,74	1646

Source: National Bank of Romania – Monthly Bulletins no.1, 2009; National Institute of Statistics – Earnings

Figure 3: The correlation between housing loans in *euro* and earnings, respectively interest rate, in 2008

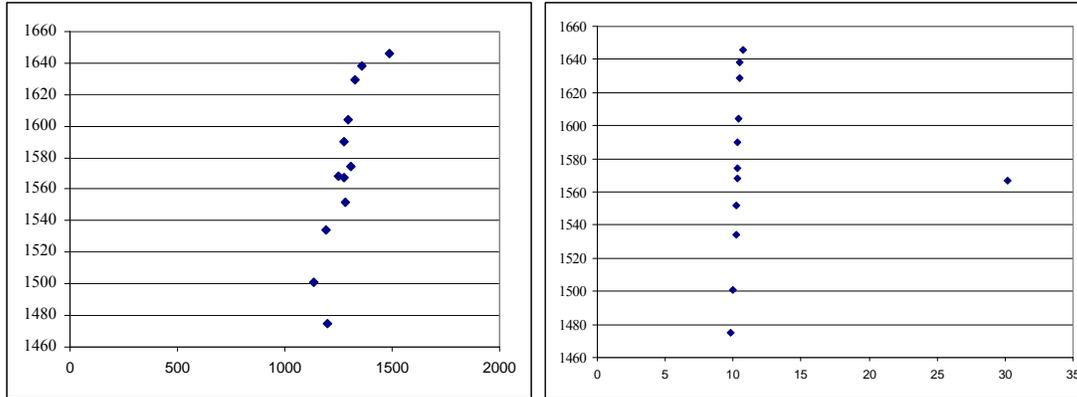


Source: National Bank of Romania – Monthly Bulletins no.1, 2009; National Institute of Statistics – Earnings

In this year, the value of the correlation coefficient (0.944751) between housing loans in *euro* and earnings indicates a direct correlation (positive value) and a strong correlation (its value is approaching the 1 value). As regarding correlation between housing loans in *lei* and earnings, the intensity of the linear connection is less strong (0.866258).

The values of the correlation coefficient between housing loans and average interest rate for housing loans show that:

- for loans in *euro*, the correlation is weak (0.762197);
- for loans in *lei*, there isn't correlation (0.003214).

Figure 4: The correlation between housing loans in *lei* and earnings, respectively interest rate, in 2008

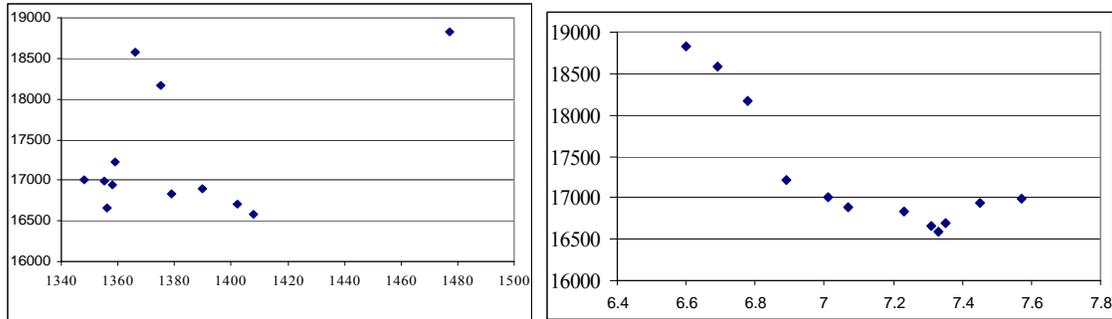
Source: National Bank of Romania – Monthly Bulletins no.1, 2009; National Institute of Statistics – Earnings

Table 3: Housing loans, Earnings and Average Interest Rates for Housing Loans, in 2009

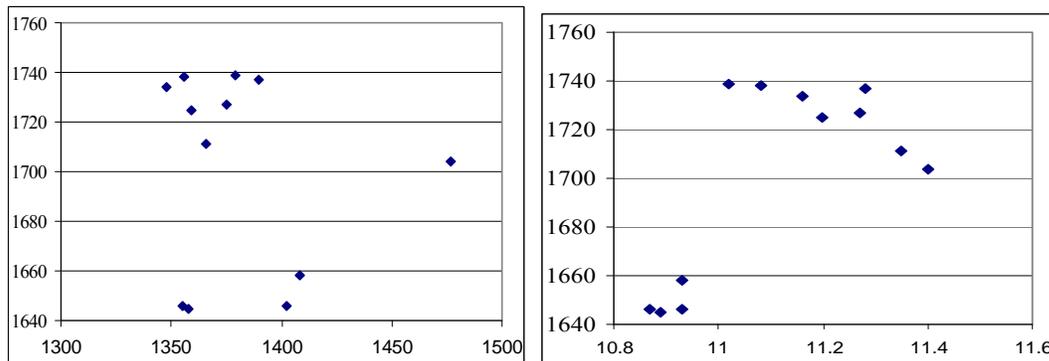
2009	Net nominal earning (lei)	Average interest rate for housing loans in <i>euro</i> , outstanding amounts (% p.a.)	Loans to households for house purchase in <i>euro</i> (lei million, end period)	Average interest rate for housing loans in <i>lei</i> , outstanding amounts (% p.a.)	Loans to households for house purchase in <i>lei</i> (lei million, end period)
January	1355	7,57	16994	10,87	1646
February	1358	7,45	16944	10,89	1645
March	1402	7,35	16702	10,93	1646
April	1408	7,33	16582	10,93	1658
May	1356	7,31	16665	11,08	1738
June	1379	7,23	16832	11,02	1739
July	1390	7,07	16893	11,28	1737
August	1348	7,01	17004	11,16	1734
September	1359	6,89	17221	11,20	1725
October	1375	6,78	18162	11,27	1727
November	1366	6,69	18577	11,35	1711
December	1477	6,60	18834	11,40	1704

Source: National Bank of Romania – Monthly Bulletins no.1, 2010; National Institute of Statistics – Earnings

The year 2009 marks a break into the linear connection between net nominal earning and loans to house purchase both euro and lei. In this year, net nominal earning was affected by the worsening of the domestic economic environment. The interpretation of the correlation coefficient (0,428332 between housing loans in euro and earnings, respectively -0,12111 between housing loans in lei and earnings, respectively) point out that the relationship has not been validated; as such, earnings and housing loans are not inter-related.

Figure 5: The correlation between housing loans in euro and earnings, respectively interest rate, in 2009

Source: National Bank of Romania – Monthly Bulletins no.1, 2010; National Institute of Statistics – Earnings

Figure 6: The correlation between housing loans in lei and earnings, respectively interest rate, in 2009

Source: National Bank of Romania – Monthly Bulletins no.1, 2010; National Institute of Statistics – Earnings

In 2010, after applying the procedure for estimating correlation coefficient are obtained the following result:

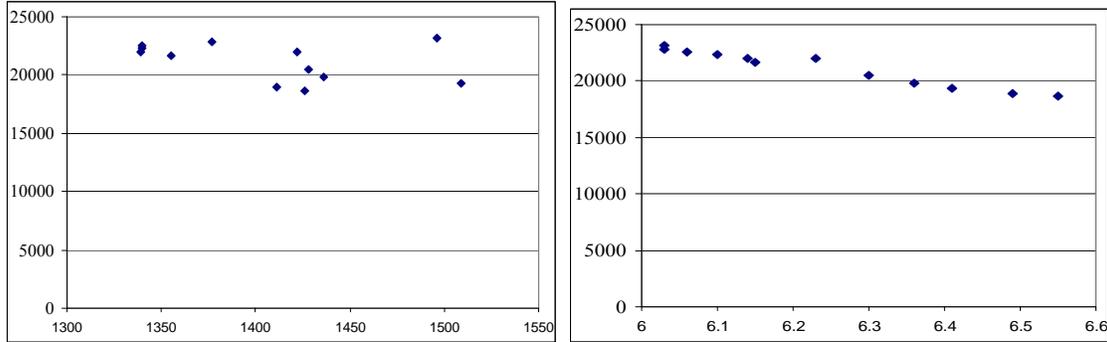
- a linear negative relationship between loans to households for house purchase in euro and average interest rate for housing loans in euro, outstanding amounts (-0.98418);
- a linear positive relationship between loans to households for house purchase in lei and average interest rate for housing loans in lei, outstanding amounts (0.963798).

Table 4: Housing loans, Earnings and Average Interest Rates for Housing Loans, in 2010

2010	Net nominal earning (lei)	Average interest rate for housing loans in euro, outstanding amounts (% p.a.)	Loans to households for house purchase in euro (lei million, end period)	Average interest rate for housing loans in lei, outstanding amounts (% p.a.)	Loans to households for house purchase in lei (lei million, end period)
January	1426	6,55	18630	11,44	1700
February	1411	6,49	18918	11,42	1693
March	1509	6,41	19338	11,38	1679
April	1436	6,36	19802	11,26	1667
May	1428	6,30	20466	11,16	1658
June	1422	6,23	21951	11,15	1665
July	1355	6,15	21712	10,74	1652
August	1339	6,14	22036	10,56	1640
September	1340	6,10	22296	10,41	1629
October	1340	6,06	22528	10,22	1620
November	1377	6,03	22830	10,19	1605
December	1496	6,03	23146	10,12	1592

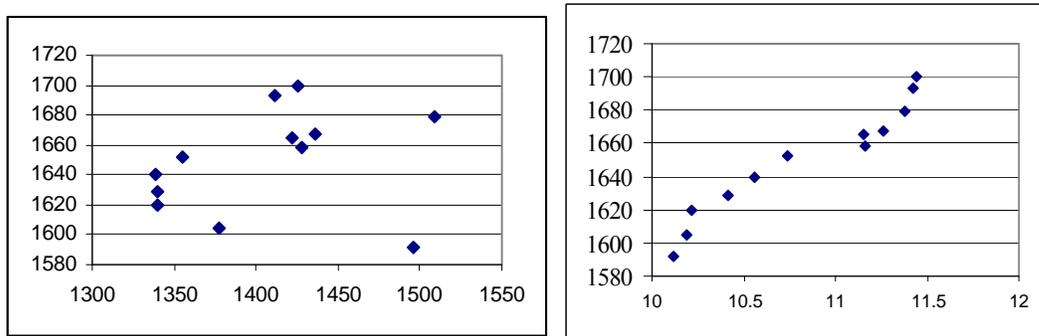
Source: National Bank of Romania – Monthly Bulletins no.1, 2011; National Institute of Statistics – Earnings

Figure 7: The correlation between housing loans in euro and earnings, respectively interest rate, in 2010



Source: National Bank of Romania – Monthly Bulletins no.1, 2011; National Institute of Statistics – Earnings

Figure 8: The correlation between housing loans in lei and earnings, respectively interest rate, in 2010



Source: National Bank of Romania – Monthly Bulletins no.1, 2011; National Institute of Statistics – Earnings

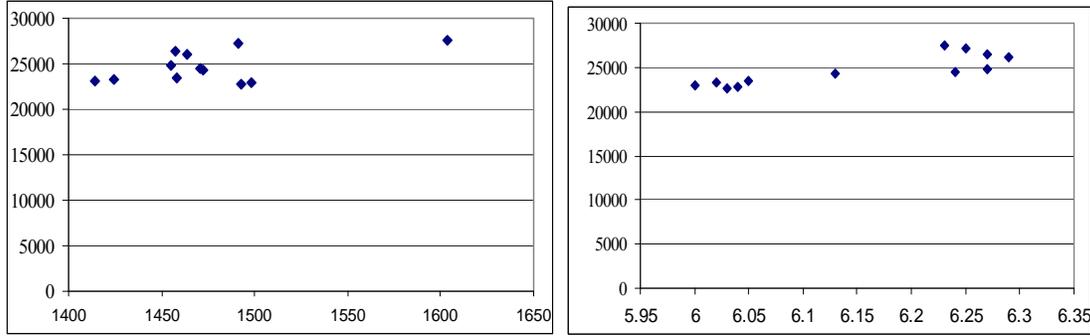
Table 5: Housing loans, Earnings and Average Interest Rates for Housing Loans, in 2011

2011	Net nominal earning (lei)	Average interest rate for housing loans in euro, outstanding amounts (% p.a.)	Loans to households for house purchase in euro (lei million, end period)	Average interest rate for housing loans in lei, outstanding amounts (% p.a.)	Loans to households for house purchase in lei (lei million, end period)
January	1424	6,02	23238	9,81	1581
February	1414	6,00	23044	9,78	1573
March	1493	6,03	22701	9,77	1561
April	1498	6,04	22877	9,59	1554
May	1458	6,05	23464	9,57	1548
June	1472	6,13	24230	9,46	1546
July	1471	6,24	24477	9,27	1537
August	1455	6,27	24876	9,27	1533
September	1464	6,29	26113	9,31	1529
October	1457	6,27	26459	9,48	1530
November	1491	6,25	27226	9,42	1509
December	1604	6,23	27509	9,43	1515

Source: National Bank of Romania – Monthly Bulletins no.1, 2012; National Institute of Statistics – Earnings

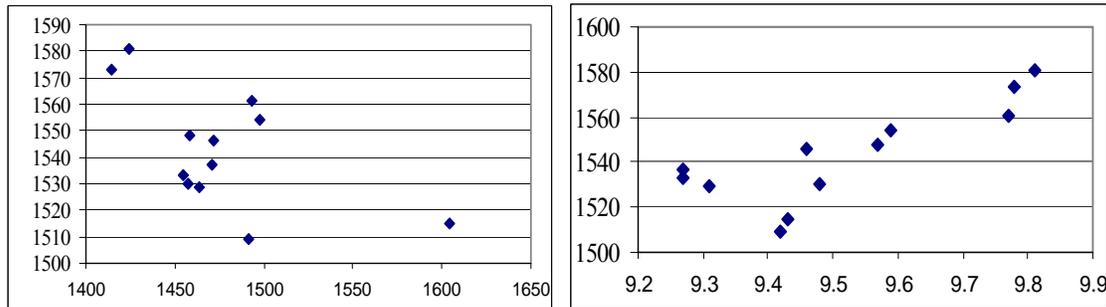
The results obtained from correlation coefficient present a correlation only loans to households for house purchase and average interest rate for housing loans both in euro and lei (0.85114, respectively 0.804667).

Figure 9: The correlation between housing loans in euro and earnings, respectively interest rate, in 2011



Source: National Bank of Romania – Monthly Bulletins no.1, 2012; National Institute of Statistics – Earnings

Figure 10: The correlation between housing loans in lei and earnings, respectively interest rate, in 2011



Source: National Bank of Romania – Monthly Bulletins no.1, 2012; National Institute of Statistics – Earnings

3. Conclusions

Table 6: The value of the correlation coefficient

		2007	2008	2009	2010	2011
Euro	Net nominal earning	0,889954	0,94475	0,428332	-0,40026	0,515405
	Average interest rate for housing loans	-0,88323	0,762197	-0,84521	-0,98418	0,85114
Lei	Net nominal earning	0,910352	0,866258	-0,12111	0,237041	-0,59256
	Average interest rate for housing loans	-0,98052	0,003214	0,679278	0,963798	0,804667

The statistic output reveals important findings in terms of relation between loans to households for house purchase and earnings on the one hand and between loans to households for house purchase and average interest rate for housing loans on the other hand. Thus, the net nominal earning impacts housing loans in 2007 and 2008. Research permitted to draw an important conclusion regarding the role average interest rate for housing loans in euro on the dynamic of the loans to households for house purchase in euro.

The results of this study are interesting because they show that causal relationship has not been the same for all period and each year has something different.

4. References

- *Annual Reports*. Available at <http://www.bnro.ro/Regular-publications-2504.aspx>
- *Earnings*. Available at <http://www.insse.ro/cms/rw/pages/comunicate/castigulSalarial.en.do>
- *Monthlz Bulletins*. Available at <http://www.bnro.ro/Regular-publications-2504.aspx>
- Gibescu, O.M. (2009) The Direct Correlation between Earnings and Households Consumption Credit, by Region of Development in Roumania, *Romanian Statistical Review*, 3, p. 29-38
- Gibescu, O.M. (2010) Households Lending Crisis for the most Important Countries of Central and Eastern Europe, *Finance - Challenges of the Future*, IX (11), p. 229-235
- Turdean, M.S.; Gibescu O.M. (2009) *Statistics*, Sigma Publisher

ASPECTS CONCERNING THE EXCISE DUTIES IN ROMANIA FOLLOWING THE ACCESSION TO THE EUROPEAN UNION

HADA Teodor

Ph. D. Professor, 1 Decembrie 1918 University of Alba Iulia, Alba-Iulia, Romania, teohada@yahoo.com

ANGHEL Dana Cristina

Eng., Customs of Alba Iulia, Romania, anghel_danacristina@yahoo.com

Abstract: *The study is divided in three parts. In introduction the notion of duty is presented as indirect taxes and their contribution to state budget. In the second part are shown the evolution of excise duties in Romania during 2007-2011, and a case study on the evolution of excise duty on coffee. The conclusion of this study shows that excise duties as indirect taxes are an important source of tax revenue to Romania's state budget.*

Novelties of this study, they are embodied in showing the evolution of excise 2007-2011 in Romania, and a concrete case study in the same period for an excisable product.

Key words: excise duties, special taxes, VAT, indicators, tax revenue.

JEL classification: H 20, H 25

1. Introduction

Excise duties are special taxes levied directly or indirectly on the consumption of certain products, at the time of their production in the Community, or their import into the territory of the Community. Gheorghe D. Bistriceanu in *Lexicon de finante banci asigurari - Encyclopaedia of banking insurance finance* - (vol. I/Economica Publishing House, 2001, pp. 14) shows that "duty, as form of consummation taxes paid by the consumer (tax form), prevalent in countries with market economies, included in the sale price of goods imported or produced and manufactured (sold) within the country are not appreciated as a strict necessity in household consumption"

Economic theory recommends the application of excise duties on goods with inelastic demand (goods that do not register changes in consumption growth under their price), goods that are consumed in large quantities cannot be substituted by buyers, so that "excise" taxes have a consistently high yield, and as tax revenues from excise duties to be relatively stable. In reality, the inelasticity demand in relation to price is not always checked. For example, fuel price increase may cause the replacement of personal transport with public transport and thus a change in the cost of fuel causes substitution between the two types of transport. Also, in case of alcoholic beverages, from the standpoint of consumer, the high quality products can be substituted with others of low quality.

As Romania excise duties are an important source for the budget, we present below their share in tax revenues in the period 2006-2012.

Table 1: Excise duties share in tax revenue during 2006-2012* million lei

Indicators	Years						
	2006*	2007*	2008**	2009***	2010***	2011****	2012*****
Tax revenue	37,900.2	4,824.2	55,133.6	48,152.9	56,304.7	67,619.7	75,726.9
Excises	9,943.1	11,207.8	12,382.5	14,272.1	16,212.4	17,363.1	19,963.4
%	26.23	25.00	22.46	29.64	28.79	25.68	26.36

* National Institute of Statistics, Statistical Yearbook of Romania, 2008, pp. 841; **Idem 2011 pp. 631

Idem 2009 pp. 973; * Budget Law 286/2010; ***** Budget Law 293/2011

The data presented above show that the excise duty has increased from year to year in absolute values reaching in 2012 to 19,963.4 million lei, a trend that is kept in the countries budget of the European Union.

According to Article 206², of Law 571/2003 on Fiscal Code, the harmonized excises are special taxes levied directly or indirectly on the consumption of the following items: a) alcohol and alcoholic beverages; b) tobacco products; and c) energy products and electricity.

2. Comparison between excise and VAT

Excise and VAT are part of indirect taxes. Value added tax is the main indirect tax in Romania in terms of revenue volume to the state and in terms of scope. Excise taxes are levied on certain products, in general the case of products which are consumed in large quantities and cannot be replaced by consumers with others of the same type, unlike the VAT which is levied on the sale of all goods, products and services.

Related to rates on the two indirect taxes, for VAT, the standard rate of tax is 24%, 9% reduced rate is applicable to certain services and supplies, and 5% for housing delivery as part of social policy, including the land on which they are built. For excise, the rates are set individually for each excisable product; their evolution is presented in detail for a period of five years in the tables below.

Excise tax is due in a single phase to economic circuit. The harmonized excisable products are subject to excises at the time of production / extraction / import in the Community. Excise duty shall become payable upon release for consumption in the Member State in which the release occurs in consumption, the due excise payers are as follows:

- Authorized warehouse keeper, registered consignee or any person who releases an excisable product under suspension of duty or in whose behalf this release is made and, if irregular departure from the tax warehouse, any other person who participated in this output;

- Where an irregularity during a movement of excise goods under duty suspension: the authorized warehouse keeper, registered consignor or any other person who has guaranteed the payment, and any person involved in the irregular departure and who was aware or should be aware of the irregular nature of the departure;

- With regard to holding of excise goods: the person holding the excise goods or any other person involved in the holding of them;

- In terms of the production of excise goods: the person producing the excise goods and, in case of irregular production, any other person involved in their production;

- Regarding the importation of excise goods: the person who declares the excisable or on whose behalf they are declared upon importation or, in case of irregular importation, any other person involved in their importation.

For VAT, the chargeability occurs when the event takes place, it interfering with the date of supplying the goods or rendering services on every stage of the economic circuit.

3. Transposition into Romanian law of the European directive on the general arrangements of excise duties

In terms of harmonization with the Community legislation, excise duty is divided into harmonized and non harmonized excise duties.

Harmonized excise duties under section 71 paragraph (1) of GD 44/2004 are related to products subject to compulsory excise duty at Community level, the general arrangements of excise duties regulated by Directive 2008/118/EC within the Community, and being transposed into Romanian law in Title VII of Law no. 571/2003 on Fiscal Code by Government Ordinance 109/2009 published in Official Gazette Part I no.689/13.10.2009.

Title VII, article 162 of Law 571/2003 on Fiscal Code in the previous appearance of Governmental Emergency Ordinance no.109 / 2009 and repealed with effect from 01.04.2010, defined the harmonized excises as special consumption taxes due to the State budget for the following products derived from domestic or imported production: a) beer b) wine c) fermented beverages other than beer and wine; d) intermediate e) ethylic alcohol f) tobacco; g) energy products; h) electricity.

Directive 2008/118/EC establishes a general scheme for levied excise duty, directly or indirectly, to consumption of the following products, hereinafter referred to as "excise goods":

(a) Energy products and electricity covered by Directive 2003/96/EC;

(b) Alcohol and alcoholic beverages covered by Directives 92/83/EEC and 92/84/EEC;

(c) Manufactured tobacco covered by Directives 95/59/EC, 92/79/EEC and 92/80/EEC.

Form of Law 571/2003 with amendments to the Tax Code by GEO 109/2009, Title VII, Art. 206 ^ 2, defines the harmonized excise duties, as special taxes levied directly or indirectly on the consumption of the following products:

a) Alcohol and alcoholic beverages;

b) Manufactured tobacco;

c) Energy products and electricity.

Thus we notice the excise goods division into three categories against eight groups of excisable products previously existing to transposing in the Romanian legislation of the European Directive 2008/118/EC. Given that the excisable product group: a) alcohol and alcoholic beverages, is defined as part of the following excisable products: beer, wine, fermented beverages other than beer and wine, intermediate products, alcohol, and group c) energy products and electricity is defined in section 4 of: energy products and in section 5 of: power, and bearing in mind that group b) tobacco remains the same as the former group f), we conclude that from / in product category under harmonized excise as they were defined prior to implementation of Directive 2008/118/EC were not excluded and no excisable products have been added but they have only been redefined in another form.

In view of the fact that it was necessary to meet the commitment made by Romania to the European Commission to change national law by 31 December 2009 (with effect from January 1, 2010), in order to eliminate from non-harmonized excise duties category of excise duties established in percentage (applicable to the tax base) to compliance with Community law in respect of tax rules (European Commission referred to a possible infringement of Article 90 of the Treaty establishing the European Communities), after the transposition of EU Directive 2008/118/EC into Romanian law by GEO 109/2009, were removed from the scope of application of excise duty, the products for which the excise duty rates were set in percentage: natural fur garments, articles of crystal, gold and and/or platinum, perfumes, weapons and hunting weapons, other than for military use, yachts and other vessels with or without motor for recreation, over 25 hp engine power for yachts and other vessels for pleasure, avoiding the initiation of infringement procedure against Romania by the European Commission and the default implementation of sanction measures. Thus from the category of non harmonized excise duty products remained in force only the coffee duties.

4. Dynamics duty in the period 2007-2012

Evolution of harmonized excise duty on products, during 2007-2012, is presented in the table below:

Table 2: Evolution of excises during 2007-2012

No. item	Name of product or product group	M.U.	Excise (euro equivalent / U.M.) 01.01.2007	Excise (euro equivalent/ U.M.) 01.07.2007	Excise (euro equivalent/ U.M.) 2008	Excise (euro equivalent/ U.M.) 2009 (April 1)	Excise (euro equivalent/ U.M.) 2009 (September 1)	Excise (euro equivalent/ U.M.) 2010	Excise (euro equivalent/ U.M.) 2011	Excise (euro equivalent/ U.M.) 2012
0	1	2	3	3	3	3		3	3	3
	Alcohol and alcoholic beverages									
1	Beer of which:	hl/1 degree Plato 1)	0.748	0.748	0.748	0.748	0.748	0.748	0.748	0.748
	1.1. Beer produced by small independent producers		0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2	Wine	hl of product								
	2.1. Still wines		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2.2. Sparkling wine		34.05	34.05	34.05	34.05	34.05	34.05	34.05	34.05
3	Fermented beverages other than beer and wine	hl of product								
	3.1. Still		0	0	0	0	0	0	100.00	100.00
	3.2. Sparkling		34.05	34.05	34.05	45.00	45.00	45.00	45.00	45.00
4	Intermediate products	hl of product	51.08	51.08	51.08	65.00	65.00	65.00	165.00	165.00
5	Ethylic Alcohol	hl de raw alcohol 2)	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00
	5.1. Ethylic alcohol produced by small distilleries		475.00	475.00	475.00	475.00	475.00	475.00	475.00	475.00
	Manufactures tobacco									
6	Cigarettes	1,000 cigarettes	34.5	41.5	50	57.00	64.00	74.00	48.50 + 22%*	48.50 + 22%*
7	Cigarettes and cigars	1,000 pieces	34.5	41.5	50	57.00	64.00	74.00	64.00	64.00
8	Fine-cut smoking tobacco intended for cigarette	Kg	46.00	55.00	66.00	73.00	81.00	81.00	81.00	81.00

	rolls									
9	Other smoking tobacco	Kg	46.00	55.00	66.00	73.00	81.00	81.00	81.00	81.00
	Energy products									
10	Leaded petrol	Tonne	547.00	547.00	547.00	547.00	547.00	547.00	547.00	547.00
		1,000 Litres	421.19	421.19	421.19	421.19	421.19	421.19	421.19	421.19
11	Unleaded petrol	Ton	425.06	425.06	425.06	436.00	436.00	452.00	467.00	467.00
		1,000 Litres	327.29	327.29	327.29	335.72	335.72	348.04	359.59	359.59
12	Diesel fuel	Tonne	307.59	307.59	325	336.00	336.00	347.00	358.00	374.00
		1,000 Litres	259.91	259.91	274.625	283.920	283.920	293.215	302.51	316.03
13	Fuel Oil	1,000 kg								
	13.1. used commercially		13.00	13.00	13.70	14.40	14.40	15.00	15.00	15.00
	13.2. non-commercial use		13.00	13.00	14.00	15.00	15.00	15.00	15.00	15.00
14	Liquefied Petroleum Gas	1,000 kg								
	14.1. used as motor fuel		128.26	128.26	128.26	128.26	128.26	128.26	128.26	128.26
	14.2. used as heating fuel		113.50	113.50	113.50	113.50	113.50	113.50	113.50	113.50
	14.3. used in household *3)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	Natural gas	GJ								
	15.1. used as motor fuel		2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
	15.2. used as heating fuel									
	15.2.1. used commercially		0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
	15.2.2. non-commercial use		0.17	0.17	0.22	0.27	0.27	0.32	0.32	0.32
16	Lamp oil (kerosene)*4)									
	16.1. used as motor fuel	Tonne	469.89	469.89	469.89	469.89	469.89	469.89	469.89	469.89
		1,000 Litres	375.91	375.91	375.91	375.91	375.91	375.91	375.91	375.91
	16.2. used as heating fuel	Tonne	469.89	469.89	469.89	469.89	469.89	469.89	469.89	469.89
		1,000 Litres	375.91	375.91	375.91	375.91	375.91	375.91	375.91	375.91
17	Coal and coke	GJ								
	17.1. used commercially		0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
	17.2. non-commercial use		0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
18	Electric Power	MWh								
	18.1. used commercially		0.26	0.26	0.34	0.42	0.42	0.50	0.50	0.50
	18.2. non-commercial use		0.52	0.52	0.68	0.84	0.84	1.00	1.00	1.00

The calculation of harmonized excise duty related is referred to pct.71 of GD 44/2004 on rules for the application of the Tax Code, with subsequent amendments and completions.

Table 3: Excise duties in the period 2007-2010 for "other excisable goods"

Item	Name of product or product group	2007 Excise (%)	2008 Excise (%)	2009 Excise (%)	2010 Excise (%)
1.	Natural fur garments (with the exception of rabbit, sheep, goat)	45	45	45	0
2.	Products made of Crystal	55	30	15	0
3.	Gold and / or platinum except wedding bands	25	15	10	0
4.	Perfumery products				
	4.1. Perfumes, of which:	35	35	35	0
	- water perfume	25	25	25	0
	4.2. Toilet water, of which:	15	15	15	0
	- eau de cologne	10	10	10	0

5.	Weapons and hunting weapons, other than for military use	100	100	100	0
----	---	-----	-----	-----	---

Source: Law 571/2003, as supplemented and amended valid for the periods given

Table 4: The level of duty rate in the period 2007-2012 for the excisable product "coffee"

Item	Name of product or product group	Excise 2007 (euro/tonne)	Excise 2008 (euro/tonne)	Excise 2009 (euro/tonne)	Excise 2010 (euro/tonne)	Excise 2011 (euro/tonne)	Excise 2012 (euro/tonne)
1	Green coffee	612	459	306	153	153	153
2	Roasted coffee including coffee with substitutes	900	675	450	225	225	225
3	Instant coffee	3,600	2,700	1,800	900	900	900

Source: Law 571/2003, as supplemented and amended valid for the periods given, The calculation of excise duty on coffee is provided in art.208 of the Fiscal Code of Romania.

5. System of excise duties in Romania

Excise regime in Romania is regulated by Title VII of Law 571/2003 on Fiscal Code, as subsequently amended, Chapter 1 - treats harmonized excise duties and Chapter 2 deals with other excisable products regime as well as by GD 44/2004 on Norms implementing the Tax Code, with subsequent amendments and completions.

For a trader registered in Romania to be able to purchase from the Community excisable products provided in chapter 2 of the aforementioned he must provide the territorial customs authority within its registered office area with the following documents:

- Application, through which trader requests the issuance of the economic operator permit;
- The identity cards of directors, in copy;
- The criminal record of company's administrator;
- The Articles of Incorporation;
- Registration certificate copy;
- Certificate of tax;
- Tax clearance certificate;
- Establishing certificate issued by ORC, proving the share capital, associations, its objects, administrators, working points where the products will achieve the reception;
- Financial statements for the last two years;
- Tax Registration Statement 010 on Company Registration as excise payer;
- Certificate of registration for VAT purpose in copy;
- Proof of registration of working points to the territorial fiscal authority;
- Statement on the calculation of the guarantee;
- OP through which the economic operator has set up the guarantee;
- Sketch of reception place of excisable products.

Territorial customs authority after analyzing the information contained in the documents releases the economic operator permit. This is valid for 3 years starting from 1st of month following the month in which the economic operator proves in setting up the guarantee in the amount and form approved by the territorial customs. The amount of guarantee for a new economic operator is 3% of estimated excise duties, relating to products which are to be purchased during one year.

6. Case Study

SC X Ltd has acquired in the period 2007-2012 from the Community territory the excisable product roasted coffee according to the table below. According to art.208 paragraph 2 of the Tax code "for coffee, soluble coffee and coffee substitutes, the duty is due only once and is calculated by applying fixed amounts per unit quantities entering the Romanian territory. For blends with soluble coffee entered on the Romanian territory, the duty is due and is calculated only for the amount of instant coffee contained in mixtures." Value in lei of duty payable to the State, established under Title VII in Euro equivalent per unit of measure is determined by converting the amounts expressed in euro-equivalent

based on exchange rate fixed on the first working day of October of the previous year, published in the Official Journal of the European Union (art.218 Law 571/2003).

Thus, the calculation of excise duty payable to the State following the acquisition from the Intra-Community territory of roasted coffee is the following:

Excise = Quantity purchased expressed in tonnes x excise share x exchange rate.

Article 211 of the Tax Code provides excise chargeability moment for goods from the Community territory, as being at the time of their receipt. Payment of excise duties to the state budget for products from the Community territory is made in the business day following that on which the products were received (art.213 Law 571/2003).

Summarizing the data from the table and combining the duty rate corresponding to the period for which the duty was due as well as corresponding exchange rate, the following conclusions can be drawn:

- The amount of excisable product purchased by the company from the Community increased progressively reaching in the first six months of 2011 to an increase of 2.3 times higher than the same period of 2008;

- Although the growth was 2.3 times higher, the amount of excise taxes paid to state budget has slightly increased (dynamic 1.08), even in the case of a more favorable exchange rate in 2011 (4.2655 lei/Euro) compared to 2008 (3.3565 lei/euro), the reason being determined by the decrease of the tax rate from 675 Euros/tonne in 2008 to 225 Euros/tonne in 2011.

Period	Quantity (to)	Excise (lei)	Rate of excise (euro/tonne)	Exchange rate (lei/1 euro)
2008 (6 months)	31,800	72,047	675	3.3565
2009	47,200	79,361	450	3.7364
2010	62,300	59,838	225	4.2688
2011 (6 months)	73,200	78,059	225	4.2655

Excise duty on coffee are maintained also in 2012, probably with the idea that it takes resources to the state budget as well as of predictability in such periods of economic instability, although their removal was planned since 2010, Romania being among the few countries in Europe where still the duty is charged on coffee. Thus, operators producing, buying or importing coffee from the Community, in 2012 will still pay excise duty amounting to 153 Euros/tonne for green coffee, 225 Euros per tonne for roasted coffee and 900 Euros per tonne for soluble coffee.

7. Conclusions

Finally, the study presented notes that excise duties are in Romania an important source to the state budget, with an increasing trend in absolute figures with the prospect of being harmonized with European Union excise duties.

8. References

- Petre Brezeanu, (2010) *Fiscalitate, Concepte, teorii, politici si abordari practice*, Wolters Kluwer Publishing House, Bucharest
- Teodor Hada, Laura Macavei, (2011) *Fiscalitatea din Romania in anul 2011*, Aeternitas Publishing House, Alba Iulia.
- Tatu L. et al. , (2009) *Fiscalitate . De la lege la practica*, C.H. Beck Publishing House, Bucharest.

THE IMPACT OF DIRECT FOREIGN INVESTMENTS ON THE ECONOMIC PRODUCTIVITY GROWTH - CASE STUDY CENTRAL AND EASTERN EUROPE

HALMI Mirela

Ph. D., Postdoctoral Studies, Romanian Academy Bucharest, Romania, mirelahalmi@yahoo.com

POPA Daniela

Ph. D. Assistant professor, Faculty of Economic Sciences, Department Finance and Accounting, Romanian German University, Sibiu, Romania, daniela.popa@roger-univ.ro

Abstract: *The approach of the impact of direct foreign investments of multinational companies on the firms pertaining to the host country and on the national economy represents an extremely important problem and of maximum actuality in the context of globalization phenomena that mark the evolution of human society presently. The emerging economies can benefit by a significant productivity growth, increased access to new resources and disentanglement markets, but they are also subjected to some considerable risks, in this period of rapid changes. The empirical study realized in this work has a set of countries from Central and Eastern Europe, among which Romania, as sample.*

Key words: direct foreign investments, impact, increase of productivity, economy

JELclassification: E 27

1. Introduction

The international competitiveness is considered a vital problem for the generation of economic growth in the industrialized countries. This problem has become an extremely important one for the emerging countries as well, including Romania, as a consequence of globalization. Attaining the competitiveness is a difficult process and requires more than a passive opening towards international markets. One of the main reasons for which international competitiveness has become a very important problem is the degree of the technology development. An important consequence of the liberalization and technological exchanges that take place everywhere is the fact that the technology and capital have become extremely mobile, direct foreign investments playing a key-role in the mobility of the resources. Beyond the transfer of productive resources, the role that the investments realized by foreign companies carry out evinces by organizing the activity in ways that differ from the traditional ways, as well as the relation between production and services with other places from where costs, capacities, advantageous logistics can be obtained.

2. The impact of direct foreign investments on technology transfer

The transfer of performing technologies is considered to be one of the most important contributions of direct foreign investments at the economic development of the host country. A big weight from the technical innovations is accomplished in transnational companies because they have the financial power to sustain the expensive research-development activities but also to apply them, in conditions of profitability, by distributing the finite product on the big markets. Technologies cannot always be commercialized as a physical product, and their owners don't agree sometimes to neither to offer them by license contract because they can be copied and used by those who didn't invest in their development.

Despite all these, direct foreign investments can contribute greatly to the technology transfer and the know-how associated to it. The contribution of direct foreign investments can be realized in the economy of the host country under the following forms from technological point of view: they can introduce a technology that wasn't used before in the local economy and, in this way, the emergence, production and consumption of a new product; they can generate the introduction and the development of new technical knowledge of operation with the new technology; the new technologies and products can lead to the development of the local innovation, better adapted to the local peculiarity.

Their transfer is very difficult because of the expensive costs necessary to obtain the new technologies. Most times, the corporation tends to transfer the results of the innovation and not the innovative capacities, especially in emerging countries.

A direct foreign investment can generate the innovation transfer in the form of managerial technologies that can pervade, either by mixed associations realized in the host country, either by personnel migration from foreign subsidiaries to local firms, besides the transfer of physical technologies.

The technology is created in the research-development departments and it is monitored from the developed countries, a source of the direct foreign investments. This facilitates the development of inland research-development departments. The transfer of technology can be realized directly, in the subsidiaries in which the multinational corporations already invested, or indirectly, as a result of a spillover kind of benefit on local companies.

An economy with a strongly competitive market stimulates the local companies to search adequate technology to resist on the market but the technology transfer can only be realized if there is the availability of foreign companies to realize this transfer. The existence of some excellence centers in the research domain in the host countries of direct foreign investments creates developing potential for the multinationals as well, these too having access to existing technology.

3. Impact on productivity

The oldest empirical attempts to surprise the impact of direct foreign investments come from case study. Caves formulate probably the first empirical model that estimates the effects of direct foreign investments on work productivity at the level of recipient country of direct foreign investments. The author demonstrates the existence of positive spillovers generated by the manufacturing sector in which there were direct foreign investments, using sectorial data from Canada and Australia. More recently, evidences of the existence of positive inter-sector spillovers due to direct foreign investments were also found in highly industrialized countries such as Great Britain. As far as emerging economies are concerned, empirical studies usually measure direct foreign investments effects on the productivity of inland enterprises, and as factor variables, an indicator of the foreign presence in that sector, as well as a series of other variables supposed to influence the productivity of that sector at their turn. It is important to know that this approach does not reveal the way in which spillover are transmitted or disseminated, but only if they exist or not. The dependant variable is either an indicator of the output of this sector or of the work productivity or of the total productivity factor (TFP). Some studies have also used an efficiency indicator as productivity measure, where the most advanced company from the technological point of view represents a technological desideratum for the others and their convergence at the level of leader-enterprise represents a measure of improvement of the technological performance in that sector.

The productivity of direct foreign investments recipient companies can register an improvement not only as a consequence of the impact of direct foreign investments, but also as an effect of the concerted direct foreign investments action and of other factors characteristic to each country and economy in part. It is about the education level of the workforce, the research-development expenses, the infrastructure quality and other characteristics of the sector taken into account, for example, the degree of industry concentration.

As a result of the realization of such empirical studies, different results were reached. Kumar reaches the conclusion that the effect of the introduction of new technologies on the productivity of companies is only visible in a longer time interval which makes the series of time used to emphasize this correlation not always reflect the truth, wanting to emphasize in the realized empirical study, the impact of direct foreign investments on company productivity. More than that, before the positive effects on productivity can be visible, it is to expect that inland companies suffer because of competition increase on the market, because of which companies with a more reduced efficiency are obliged to set free resources to make more efficient investments. Local companies without competitors will be obliged to become more efficient to keep their market shares, leading to the efficiency increase of the whole sector.

Generally, the studies realized at microeconomic level consider the contribution of foreign capital to inland companies with mixed capital and their productivity as positively correlated.

Empirical studies meant to highlight some spillover types of effects horizontally, especially for inland companies that compete with the subsidiaries of the multinationals differently, reach the conclusion that they are rare, with the exception of those existing in companies that activate in different activity sectors.

4. The impact on innovation, export stimulus of the host country and human capital

The direct foreign investments substitute local research-development and innovation activities as the recipient company of the technology becomes a linking point in the global network of the subsidiaries

of the multinational corporations, subjected to the decision from the central level. The multinational corporations centralize the research-development activities at the level of the mother-company, and the local research-development activity from the countries in which the subsidiaries are located is taken over only if it corresponds to the global strategy from the multinational corporation level. This thing slows down the technology transfer process at the level of host countries.

Direct foreign investments also exert a qualitative effect on production, besides the quantitative impact due to the creation of production capacities. It is about the technology transfer to the subsidiaries that can produce a positive impact on productivity and efficiency, on creating competences and on economic development.

One of the main sources of competitiveness in the most modern sectors is innovation. Innovation manifests itself as the innovation of the product that stimulates consumption and differences the demand and the innovation of the process which produces the decrease of production costs. The multinational corporations represent one of the important factors in creating and controlling the innovation and the technology. The technology transfer linked to direct foreign investments represents an important way to obtain some new technologies and to have access on innovations both on products and on processes, often perceived as one of the main impacts of direct foreign investments. While the technological difference between developed countries and emergent countries is recognized, one of the political purposes to attract direct foreign investments, used by the governments of the latter is often the one to get access to new technologies. Instead of inventing what already exists, the emerging countries are rather interested in importing and imitating the technologies created by the developed countries. The host countries hope to acquire technologies that they can't be developed by themselves, to create different products and to reduce the production costs by attracting direct foreign investments. This type of benefit views not only technology as physical good but also non-touchable, silent benefits, a packet of complementary resources, organizing, marketing, and human resources competences.

Direct foreign investments represent one of the technology transfer ways, together with external commerce and the license contract.

The international commerce is a source of advanced knowledge in the technology domain. The imported products contain elements of new technology and they have good quality which improves the quality of the production process in the case of intermediate goods and finite goods for consumers. The importing country can also benefit from the knowledge transfer due to imported goods, by imitation or by research.

As far as the license contract is concerned, it is a way to exploit the technical advantages, avoiding the commerce barriers and implementing expenses abroad. For the importing country the license offers the advantage of a standardized technological transfer as well as technical and organizing assistance of the exporter. Still, this transfer way presents some inconveniences. The exporter is subjected to the risk of losing his knowledge and because of this he transfers already exceeded technologies. Multinational corporations are tempted to transfer the new technologies by creating subsidiaries and not by license. These multinational corporations produce, possess and control the most advanced technology and they are known as the producers of the biggest part of R&D activity.

The development of human capital leads to changes of productivity structures leading to activities that have a higher added value. The efficiency of technology transfer is influenced by the absorption capacity that manifests itself by the existence of educated workforce, able to exploit the external sources of knowledge.

Direct foreign investments are attracted by the countries with open economies, cheap workforce and abounding natural resources.

One can talk about certain complementarily regarding external commerce and direct investments. If we follow the internationalization logics the companies start their activity abroad, first by exports and, after markets are consolidated, the following step is the implementation. From this moment on, the exports are replaced by the production from another country. But the impact on commerce is not just negative, because in most cases the subsidiary imports prime matter, intermediate goods, installations and services from other companies from the network.

If we talk about the impact of direct foreign investments on external commerce the motivations of direct foreign investments are the search for resources and the search for markets. The role of direct foreign investments on exterior commerce is different, depending on the investor's motivation. The presence of direct foreign investments influences the commercial entrance but also the exports in the same measure. The contribution of direct foreign investments on exterior equilibrium by the public

authorities of the recipient country is perceived not only as contribution of exterior capital that does not generate debts, but also a factor that stimulates the exports, improving the sales balance of current operations in this way. While direct foreign investments are in the search of a non-expensive workforce, like that from the emerging countries, they want to reduce their costs and they are attracted by the local markets that have a weaker purchasing capacity to a lesser extent. In this case, direct foreign investments are orientated to exports. While direct foreign investments are in the search of cheap resources, especially the workforce, their presence stimulates the exports bringing necessary capital to exploit these resources that is the capital that the receiving economies lack. In this way, direct foreign investments cover not only the lack of financial resources but also the risk induced by the development of new exports

The impact of direct foreign investment and of the interventions of the foreign companies on the exports of host-countries exists and it is sometimes a significant one. It can be evaluated in the best way through an individual approach as well as the other types of effects of the internationalization of production, each country being able to present different characteristics and a different position in its quality as recipient of direct foreign investments.

Not finally, the impact on human capital is obvious and it also leads eventually to general productivity growth of the companies. The effects of the interventions of the foreign subsidiaries depend on a lot of factors, among which the motivation of the investment and its type are closely linked in the internationalization strategy of the investing company. The local companies could benefit from by the existence on the market of a workforce that has a superior education ensured by already present multinational companies. In turns, foreign companies can benefit by employees that possess previous useful pieces of information about life.

5. The impact of direct foreign investments on productivity. Empirical study on countries pertaining to Central and Eastern Europe

The realized empirical study takes into account the *Pool data* type of model, the description of the model being marked out by the relation of the type:

$$f_{it} = \text{PIB}_{it} + \alpha + \varepsilon_{it} \quad (1)$$

Where:

FISD = influx/stockpile of direct foreign investments for the country *i*, for current period *t*;

PIB = the increase rhythm of real Gross Domestic Product;

α = the constant designated to surprise common effects evinced in the group of countries taken into account;

ε = the non-correlated residual variable.

The results of the empirical estimation present themselves in the following way: the method of deliverance TSLS - TWO STARG LEAST SQUARED, using the phased levels of direct foreign investments influxes and the increase rhythm of the real Gross Domestic Product as instrumental values:

Table 1: The correlation between the direct foreign investments influx and the GDP

The dependant variable: FISD

Method: Pooled IV/Two-stage EGLS

(adjusted) Period: 1999 2010

Number of observations: 12 after adjustments

Transverse observations: 4

Total pool (balanced) observations: 48

The instrument list: fisd?(-1) constant rpib?(-1)

SUR period (PCSE) standard errors (correction depending on the liberty degrees)

Variable	Coefficient	Standard error	t-Statistical	Prob.
C	3289.964	841.2035	3.911020	0.0005
BG--RPIBBG	233.3784	126.5889	1.843594	0.0755
UG--RPIBUG	1289.966	442.3021	2.916482	0.0068

RO--RPIBRO	213.8697	237.6365	0.899987	0.3755
SL--RPIBSL	-2025.077	555.6996	-3.644193	0.0010
Fixed effects (Transverse)				
BG--C	-1474.153			
UG--C	-4132.248			
RO--C	-258.0031			
SL--C	5864.404			
fixed effects (Period)				
1999--C	-534.5904			
2000--C	-135.2014			
2001--C	-1342.957			
2002--C	-664.3561			
2003--C	-2078.808			
2004--C	-2219.979			
2005--C	-1765.220			
2006--C	-2182.633			
2007--C	329.4614			
2008--C	1472.696			
2009--C	4125.090			
2010--C	4996.498			
The specification of effects				
Transverse section (dummy variable)				
Fixed period (dummy variable)				
Weighted Statistics				
R²	0.855419	dependant medium variable		2923.187
Adjusted R²	0.765679	S.D. dependent var		3169.105
S.E. of regression	1534.059	Sum squared resid		68246815
Durbin-Watson statistics	1.826653	Instrument rank		23.00000
Unweighted Statistics				
R²	0.809611	dependant medium variable		2740.458
Sum squared resid	71654872	Durbin-Watson statistics		1.809535

One can invoke the analysis of the stationary residual variables to estimate the quality of the model:

One can presume that there is a certain process of *unit root* type that is common for the ensemble of considered countries, but that the quality of the model can be considered as satisfactory in general, taking into account the Durbin Watson Statistics, as well as the Stationary Tests for the residuals of the model.

Also, having in view the level of R^2 , one can state that the model explains a significant proportion from the dynamics of direct foreign investments influxes. More analytically, having in view the sign of the coefficient and the statistics of the text, one can notice that:

- There is a set of common factors that exert a significant influence on the regional dynamics on direct foreign investments influxes;
- The considered economic systems react globally in a different manner considering the absorption capacity of direct foreign investments influxes;
- If statistics is reflected and the sign of the coefficient reflects the direct connection between the economic growth and the direct foreign investments dynamics in the case of Bulgaria and

Hungary, it appears as having a more reduced significance in Romania's case, and in Slovenia's case the connection seems to be reversed.

- The fixed effects afferent to the considered temporary period suggest the fact that during the observation period modifications intervened in the direct foreign investments behavior.

More explanations regarding direct behavior of direct foreign investments influges can be advanced at hypothesis level. Between these:

- a) the structural functional and institutional transformations that characterize the evolution of the considered economic systems;
- b) the effects of the "new" stability and increase pact with consequences on the economic dynamics of these countries;
- c) The effects of economic and financial instability with a direct impact both on direct investments and portfolio investments.

More generally, the model suggests that the differences that exist at the level of the considered countries in the transformation process explain the systemic capacity of these ones to attract and stabilize the direct foreign investments influges.

The absorption capacity seems to be critical for the analysis of direct foreign investments influges regardless of "strategic" reasons that laid at the basis of their generation.

Relatively similar conclusions can be also broken away in the situation in which the model is re-estimated considering the dependant and explanatory variable in term of stockpile and not of influx:

Table 2: The correlation between direct foreign investments stock and the GDP

Dependant variable: SISD
Method: Pooled IV/Two-stage EGLS
(adjusted) Period: 1999 2010
Number of observations: 12 after adjustments
Transverse observations: 4
Total pool (balanced) observations: 48
Instrument list: fisd?(-1) constant rpib?(-1)
SUR (PCSE) Period standard errors (correction depending on the liberty degrees)
Dependant variable: SISD
Method: Pooled IV/Two-stage EGLS

Variable	Coefficient	Standard error	t-Statistic	Prob.
C	-23135.46	10755.56	-2.151023	0.0399
BG--PIBBG	12.79531	3.962358	3.229217	0.0031
UG--PIBUG	9.171586	1.594044	5.753659	0.0000
RO--PIBRO	12.40000	2.474575	5.010962	0.0000
SL--PIBSL	1.945042	1.105122	1.760024	0.0889
Fixed effects				
BG--C	420.8118			
UG--C	-4772.556			
RO--C	2333.658			
SL--C	2018.086			
Fixed effects (Period)				
1999--C	3467.166			
2000--C	4770.898			
2001--C	3719.127			
2002--C	5138.514			
2003--C	6268.837			
2004--C	5492.095			
2005--C	2941.823			
2006--C	-1088.881			
2007--C	-3612.481			

2008--C	-8393.897
2009--C	-2656.429
2010--C	-16046.77

Effects Specification

Transverse section (dummy variable)

Fixed period (dummy variable)

Weighted Statistics

R²	0.982096	Dependant medium variable	19237.89
Adjusted R²	0.970983	S.D. dependant var	23725.19
S.E. of regression	4041.429	Sum squared resid	4.74E+08
Durbin-Watson statistics	2.155321	Instrument rank	23.00000

Unweighted Statistics

R²	0.972978	Dependant medium variable	17720.75
Sum squared resid	5.45E+08	Durbin-Watson statistics	2.221465

The main existing differences towards the model explained in terms of influx can be resumed:

- in this case the association between SISD level and Gross Domestic Product per capita appears to be a positive and significant one in all cases.

- The statistical level and the Durbin-Watson test as well as the stationary tests of the residual variables indicate the existence of a qualitative difference between the 2 models of estimation.

En ensemble, one can presume that:

- The direct foreign investments level and dynamics are noticeably influenced by the economic growth;

- The direct foreign investments regional evolution depends on internal characteristics of the receiving economy on one hand, and on a set of exogenous factors on the other hand;

- Slovenia seems to be an atypical case in a certain measure, its behavior in attracting direct foreign investments being different from that of other countries taken into account, in the ensemble of the group of considered countries.

It needs to be remembered that there is a connection between the economic dynamics and direct foreign investments dynamics. For instance, the following results are obtained if the model is specified again, selecting the level of Gross Domestic Product per capita as dependant variable and SISD as explanatory variable:

By examining these results it is noticeable in essence that although "the reversed" connection appears in a certain measure, it is less obvious, and the statistical significance en ensemble is a more reduced one. It is only highlighted clearly in Slovenia's case and one can resume that this country approaches the level of a small and open economy more obvious integrated in real and international financial influxes.

The realized analysis allows highlighting the fact there are some regional peculiarities that are determiners for their configuration and amplitude beyond punctual specific reasons that laid at the basis of FISD generation. In this way, one can presume that the existence of some functional connections between the considered economic systems as well as their evolution context represents a variable in explaining the direct foreign investments attraction and stabilizing process.

6. Conclusions

An important consequence of the liberalization and of technological exchanges that took place everywhere is the fact that the technology and the capital became extremely mobile, the direct foreign investments playing a key role in the mobility of the resources. Beyond the transfer of productive

resources, the role that the investments realized by foreign companies accomplish manifests itself by organizing the activity in ways that differ from the traditional ones, as well as in the relation between production and services with other procurement sources of some advantageous technological capacities. The rapid technological progress causes major changes globally as far as the industrial activity is concerned, becoming vital that the emerging economies be aware of these changes and to undertake measures meant to lead to the development of technological capacities. The isolation of economies against international commerce and international investments is extremely expensive.

The direct foreign investments are extremely important generating spillovers that come to improve the performance of inland companies by technology transfer, increased work productivity, the intensity of investments and exports, and the qualification of workforce. Beyond the efforts that inland companies have to make to assimilate new technologies meant to increase their productivity, it is necessary that politicized strategies to stimulate technological development exist nationally that should welcome direct foreign investments, technology and managerial capacities that follow them.

The empirical studies conducted globally that come to quantify the impact of direct foreign investments on productivity had both positive, significant or limited results and negative, depending on the industry or the economy taken into account. The studies conducted in Romania were quite a few, although numerous internationally, because of the unavailability of data at national level.

The fiscal competition is positive both for the tax payer and the state. The first one activate in a fiscal background that allows them to obtain big profits and a lower fiscal pressure, and the state gets bigger state incomes as the taxation basis increases. The competition will intensify taking into account the new business methods that appear, despite the efforts to bring the fiscal systems closer.

Comparing the evolution of taxation rate of the incomes of companies and the level of taxation with the influxes of direct foreign investments, one can assess that there is a direct connection between fiscal competitiveness and the attraction of direct foreign investments.

As a consequence of the results of the realized empirical study regarding the correlation between the direct foreign investments and the economic growth, we can state that there is a direct relation between the evolution of direct foreign investments influxes and the evolution of Gross Domestic Product and, as a consequence, the economic development process can be influenced by means of the influxes of direct foreign investments.

7. Acknowledgment

This paper was supported by the project "Post-Doctoral studies in Economics: training program for elite researchers – SPODE", co-founded by European Social Fund through the Development of Human Resources Operational Program 2007-2013, contract no. POSDRU/89/1.5/S/61755

8. References

- Alfaro L., (2003) *FDI and Economic Growth: The Role of Local Financial Markets*, in Journal of International Economics 61, no.1;
- Aslanoglu E., (2000) *Spillover Effects of Foreign Direct Investments on Turkish Manufacturing Industry*, Journal of International Development 12;
- Athukorala P., (2003) *Foreign direct investment in crises and recovery: lessons from the 1997-1998 Asian crises*, in Australian Economic History Review 43, no.2;
- Baniak A., Cukrowski J., Herczynski J., (2002) *On Determinants of Foreign Direct Investment in Transition Economies*, Global Development Network Workshop, Prague2;
- Barry F., Hannan A., (2001) *Foreign Direct Investments and the Predictive Powers of Revealed Comparative Advantage Indicators*, Department of Economics and Institute for the Study of Social Change, University College Dublin;
- Campos N., (2002) *Foreign Direct Investment as Technology Transferred; Some Panel Evidence from the Transition Economies*, William Davidson Working Paper, No.338 ;
- Corduneanu Carmen, Pirtea M., Dima B., Miloş Laura, (2009) *Impactul investițiilor străine directe asupra creșterii productivității economiei țării gazdă. Cazul Europei Centrale și de Est*, Work-shop exploratoriu Impactul structural și funcțional al investițiilor străine directe în contextual instabilității financiare globale, Timișoara, 27 martie;
- Edmiston K., Mudd S., Valev N., (2003) *Tax Structures and FDI, The Deterrent Effect of Complexity and Uncertainty*, William Davidson Working Paper, number 558.

- Ekholm K., Forslid R., Markusen J., (2003) *Export Platform Foreign Direct Investment*, NBER Working Paper no.9517;
- Haskel J.E., Pereira S., Slaughter M., (2002) *Does Inward Foreign Direct Investment Boost the Productivity of Domestic Firms?*, NBER Working Paper 8724;
- Hunya G., (2002) *FDI in South – Eastern Europe in the early 2000*, mimeo WIIW, Vienna;
- Khawar M., (2003) *Productivity and Foreign Direct Investment-Evidence from Mexico*, Journal of Economic Studies no.30;
- Lall S., (2003) *Foreign Direct Investment, Technology Development and Competitiveness Issues and Evidence*, in S.Lall and S.Urata, *Competitiveness, FDI and Technological Activity in East Asia*, Cheltenham, Edward Elgar;
- Lipsey R.E., Sjöholm F. (2005) *The Impact of Inward FDI on Host Countries: Why Such Different Answers?, Does Foreign Direct Investment Promote Development?*, Institute for International Economics, Washington;
- Moise Elena, (2005) *Investiții străine directe*, Ed. Victor, București;
- Munteanu C., Boscaiu V., Lusnea D., (2000) *Impactul comerțului exterior și investițiile străine directe asupra productivității și distribuției veniturilor în industrii prelucrătoare*, Centrul Român de Politici Economice, București;
- Sadik A., Bolbol A., (2001) *Capital Flows, FDI, and Technology Spillovers: Evidence from Arab Countries*, World Development 29;
- Sinani E., Meyer K., (2004) *Spillovers of Technology Transfer from FDI: The Case of Estonia*, Journal of Comparative Economics, 32;

HEDGING CURRENCY RISK IN EUROPEAN STOCK MARKETS: EVIDENCE FROM THE CURRENT FINANCIAL CRISIS

HOROBET Alexandra

Ph. D. Professor, Department of International Business and Economics, Bucharest University of Economic Studies, Bucharest, Romania, alexandra.horobet@rei.ase.ro

DRAGHICI Alina

Ph. D. Associate professor, Department of International Business and Economics, Bucharest University of Economic Studies, Bucharest, Romania, alina.draghici@rei.ase.ro

CONSTANTIN Laura Gabriela

Ph. D. Assistant professor, Department of International Business and Economics, Bucharest University of Economic Studies, Bucharest, Romania, laura.constantin@rei.ase.ro

Abstract: *Our paper examines the impact of currency risk on investments made by a Euro based investor in European countries in normal versus turbulent times. We use unhedged and hedged stock market returns to see whether the performance of portfolios made up of stocks from developed markets could be enhanced by including stocks from emerging markets and hedging currency risk. The contribution of currency risk is highly fluctuating, but generally positive, indicating that currency risk adds to the local market risk. Hedging currency risk is a good choice when short-selling is allowed; however, the constraint of no short-selling alters this pattern.*

Key words: hedging, currency risk, financial crisis, portfolio investments, EMU

JEL classification: G 11, G 15

1. Introduction

In a framework of increasing international portfolio investments and of business opportunities diversification at the global level, but also of higher capital market integration, investors critically evaluate the exchange rate risk, particularly when investments are made in emerging markets. These markets are acknowledged of having higher levels of instability, compared to developed markets, and the crises that affected them in the 1990s, but also the current financial turmoil, have demonstrated that the impact of exchange rate fluctuations is seriously experienced by international investors. In this context, various studies raised the issue of a “legitimate” risk premium associated to investments in foreign markets that would compensate investors for taking on higher risks than at home.

Our paper examines the impact of currency risk on investments made by a euro-based investor in European countries, in a static and dynamic framework, by considering its relevance in normal versus turbulent times. Also, we investigate whether the performance of well diversified portfolios made up of stocks from European developed markets could be enhanced by including stocks from emerging markets and by hedging currency risk. The contributions our paper makes to research in the field are threefold: (1) we study the relevance of currency risk from a European only perspective, which is important given the desired process of macroeconomic integration in the region; (2) we show the role of hedging currency risk in determining the benefits from international diversification and explore whether hedging currency risk may improve the risk-return profile of investments at the European level; (3) we complement a static approach with a dynamic one by considering the differences induced by macroeconomic evolutions and financial market volatility on the impact of currency risk for European portfolios. The structure of the paper is as follows. The research background is presented in section two; section three outlines sources and types of data together with the research methodology, while in sections four and five we have included the results and conclusions, respectively.

2. Research background

The impact of exchange rate fluctuations is felt at the level of risk and return for any investment made abroad, in a different currency than the reference currency of the investor. Jorion (1985), Levy and Lim (1994), Eun and Resnick (1994) and, more recently, Bugar and Maurer (2002) have shown that investors that do not control for the uncertainty associated to exchange rate movements are in the difficult position of obtaining gains from international investments that do not exceed the costs attached to holding assets abroad.

The explanation resides in the correlations between exchange rates, which are not sufficiently small to provide investors with enough input for achieving good diversification in an international portfolio.

Research on the links between stock market returns and exchange rate movements has developed since the beginning of the 1980s, with rather mixed evidences, depending on the methodology employed. One set of studies uses arbitrage pricing models to identify the exposure of national stock markets or various industries to exchange rate fluctuations. Aggarwal (1981) is among the first researchers that study stock prices and exchange rates and finds a significant relationship between the appreciating US dollar and US stock prices, but a few years later Soenen and Hennigan (1988) find an opposite relationship between the two. Jorion (1990) examines US multinational corporations exposure to exchange rate risk for a 17 years period and concludes that share prices of these companies are not systematically influenced by changes in nominal exchange rates. Bartov and Bodnar (1994) and Choi and Prasad (1995) confirm Jorion's findings, while Gao (2000) and Koutmos and Martin (2003) detect a more significant link between American companies share prices and changes in the nominal exchange rate of the dollar against various currencies. Besides US companies, Dutch companies have been researched by De Jong et al. (2002) that find more significant exposures in phases of the Dutch guilder depreciation, after investigating 117 companies over a 5-year period (1994-1998). British companies also display significant exposure, according to El-Masry (2003), but depending to a large extent on the nature of their businesses. Kyimaz (2003) investigates Turkish companies for the period 1991-1998 and finds significant exposures to exchange rate risk, but also variable in magnitude from one industry to another. Horobet and Lupu (2005) analyse the Romanian market over the 2000-2005 period and find weak significant exposures of stock returns to the euro-leu and US dollar-leu exchange rate. Their findings may be explained by the reduced importance of the euro or dollar denominated cash flows and/or assets and liabilities in the financial flows of Romanian companies, by the possible presence of internal hedging operations or by the low capital market efficiency. Furthermore, Horobet and Lupu (2006) analyze ten CEE countries (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovenia, Slovakia and Romania) by taking into consideration changes in these countries' real exchange rates against the U.S. dollar and the euro. The results indicate the lack of contemporaneous and lagged exposures, which may be interpreted as a failure of stock market investors to incorporate changes in the competitive positions of firms in these countries in the stock returns. More recently, Horobet and Dumitrescu (2008) investigated the exposure of national stock markets from four countries in Central and Eastern Europe – Czech Republic, Hungary, Poland and Romania – to nominal and real exchange rate risk, using monthly data over the 1999-2007 timeframe. They find that companies from the region show contemporaneous and lagged exposure to nominal and real exchange rate risk and that these exposures are of the same type in all countries, suggesting a similarity in the economic structure of these countries in terms of foreign operations activity – exporting versus importing.

While understanding the exposure of national capital markets and companies to currency risk is important, an analysis in the context of international portfolio investments is critical for the proper assessment of currency risk impact, given the diversification effects that national capital and currency markets provide to any international investor. Hauser et al. (1994) examine the role of exchange rate risk in determining the benefits from international diversification in developed and emerging stock markets. They find that under certain conditions such hedging may not be beneficial. In fact, hedging the currency risk of high-risk emerging markets can decrease the gains from international diversification. Their findings indicate that only investors who tolerate high levels of risk can gain by diversifying into emerging markets. They further indicate that in such diversification, the hedging of currency risk is an inferior policy because of the negative correlations between the exchange rate and stock returns when measured in the local currencies of emerging markets. Middleton et al. (2007) study the potential benefits from diversifying into eight stock markets of CEE countries. Their results show that the optimal CEE portfolio significantly outperformed its developed market counterparts in the UK, US and the World over the time period analysed (1998-2003), both in terms of risk and return. The degree of outperformance varies over time and was smallest during the Russian crisis. They also find that country factors are more important than industry factors in explaining the variation in CEE stock market returns, thus investors should concentrate on choosing the right countries and the time horizon of their investment should be less than one year. The CEE equity markets as valuable diversification opportunities to international investors is supported by Patev et al. (2006) who found that dollar-based investors can benefit from diversification in CEE, as they are not co-integrated.

Investigating the impact of exchange rate movement on risk-return outcome of foreign portfolio investments, Shetty and Manley (2006) find that hedging against currency risk does not help to improve the return outcome nor does it help to lower return correlations, except in few instances, but it does lower return volatilities for some investors. Although hedging currency risk is a common practice in developed financial

markets, emerging markets have historically lacked derivatives markets as support for hedging decisions. As mentioned by Lien and Zhang (2008), financial derivatives markets sustained capital inflows into emerging economies, but they have also led to exacerbated volatility; therefore, the development of derivatives markets in emerging economies needs to be complemented by sound macroeconomic and financial policies.

The current financial crisis had a tremendous impact on global financial markets, regardless of the type of country, developed or emerging. Under these circumstances, it is critical to understand the national capital markets' exposure to various risk factors and, in the context of our research, to currency risk. Mainly, the question is whether during crisis periods one may detect a significant increase in the exposure to currency risk and if such exposure is global or country specific. Also, since it is common knowledge know that correlations among national markets increase in crisis times, it is relevant to enquire whether such phenomenon may lead to decreased diversification opportunities for international investors. In their study of a previous financial crisis – the 1997 Asian crisis – Chakrabarti and Roll (2002) found that covariances, correlations and volatilities increased from the pre-crisis to the crisis period in both European and East Asian countries. Before the crisis, diversification was more powerful in Asian region, due perhaps to closer ties among countries in European community, but during the crisis this situation reversed. Kenourgios et al. (2011), investigate financial contagion, during the period 1995–2006, in two developed markets (United States and United Kingdom) and four emerging equity markets (Brazil, Russia, India, China). They find that there is a contagion effect from the crisis country to all others, for each of the examined financial crises and also that emerging BRIC markets are more prone to financial contagion. They conclude that these results have important implications for international investors, as the diversification sought by investing in multiple markets from different regional blocks is likely to be lower in turbulent times. Therefore, an investment strategy centred only on international diversification seems not to work in practice during turmoil periods. Brana and Prat (2010), using a process of risk ranking, show that the downside potential for market risk, achieved by an international portfolio diversification including emerging country assets denominated in local currencies, is higher than the downside potential for credit risk supported by an investor who includes exclusively in his portfolio emerging securities denominated in foreign currencies. The authors conclude that advantages gained from diversification due to low correlations between changes in return rates of emerging securities, but also with other asset classes, should induce investors to modify structurally their asset allocations in favour of securities denominated in local currency in order to improve their portfolio efficiency.

In the framework of optimal portfolio selection, Niklewski and Rodgers (2011) investigate if the current financial crisis has resulted in a long-term structural change in the conditional correlation relationship between returns in US equity markets and returns in international equity markets. The authors conclude that there isn't much confirmation of the hypothesis that economic structural adjustment has resulted in long-term changes in the correlation between US and developed markets. Nevertheless they find some that the conditional correlation relationship between US and emerging or frontier markets evidence was modified due to structural change. Horobet et al. (2010) study the significance of exchange rate volatility for the total risk of an investment in CEE countries from the point of view of an US dollar-based investor. Their findings show that, in general, exchange rate risk is a positive contributor to the risk of an investment in CEE markets, and that in more turbulent times, as the ones after September 2007, the impact of exchange rate risk is higher than in normal times. CEE markets seemed to become less good diversifiers for a US portfolio after the end of 2007, as they found a positive and increasing contribution of currency risk to the correlation between any of the CEE markets and the US market.

3. Data and research methodology

We develop our research on three levels: (I) we investigate the contribution of exchange rate risk on the volatility of an investment made by an EMU-based investor in European countries over the period January 2005 – February 2011; (II) we explore the dynamic evolution of exchange rate risk contribution over the same period; (III) we examine the benefits derived from hedging exchange rate risk in European diversified portfolios, by constructing six efficient frontiers: an unhedged frontier of developed markets; a hedged frontier of developed markets; an unhedged frontier of emerging markets; a hedged frontier of emerging markets; an unhedged frontier combining developed and emerging markets; and a hedged frontier combining developed and emerging markets.

To measure the extent of currency risk influence on local markets' volatilities, we first decompose the Euro returns as following:

$$\begin{aligned}
r_t^{EUR} &= \ln P_t^{FC} S_t^{EUR/FC} - \ln P_{t-1}^{FC} S_{t-1}^{EUR/FC} = \ln(P_t^{FC} - P_{t-1}^{FC}) - \ln(S_t^{EUR/FC} - S_{t-1}^{EUR/FC}) \\
&= r_t^{FC} + s_t^{EUR/FC}
\end{aligned} \tag{1}$$

where r_t^{EUR} is the return in the European markets denominated in Euros, P_t^{FC} is the European stock market index at time t, denominated in local currency units, r_t^{FC} is the local currency denominated return at time t/t-1, $S_t^{EUR/FC}$ is the exchange rate of the local currencies against the Euro, and $S_t^{EUR/FC}$ is the exchange rate fluctuation of the local currencies relative to the Euro at time t/t-1. Equation (1) shows that the return obtained by an EMU-based investor is composed of the return in the local currency and the exchange rate fluctuation. For what concerns the risk of an investment made in European stock markets, we compute the variance of returns as in equation (2), as follows:

$$\text{var}(r^{EUR}) = \text{var}(r^{FC}) + \text{var}(s^{EUR/FC}) + 2 \text{cov}(r^{FC}, s^{EUR/FC}) \tag{2}$$

The proportion of Euro denominated returns' volatility attributable to exchange rate fluctuations, which we denote by λ (lambda), may be computed as following:

$$\lambda = \frac{\text{var}(s^{EUR/FC}) + 2 \text{cov}(r^{FC}, s^{EUR/FC})}{\text{var}(r^{EUR})} = 1 - \frac{\text{var}(r^{FC})}{\text{var}(r^{EUR})} \tag{3}$$

Equation (3) shows that the proportion of European markets volatility explained by changes in the local currencies exchange rates against the Euro depends not only on the volatility in the foreign exchange market, but also on the covariance of the European stock market returns and exchange rate changes. This implies that the exchange rate volatility will not necessarily induce more volatility in the returns available to foreign investors, due to the value and sign of the covariance.

The dynamics of currency risk impact on European investments volatility will be studied from two perspectives. First, we decompose the overall period in three sub-periods, different from the perspective of global macroeconomic developments and financial markets evolutions: (i) January 2005 – September 2007, a period of economic growth and booming financial markets; (ii) October 2007 – May 2009, a period of financial turmoil which marked the entry into the second largest economic recessions ever; (iii) June 2009 – March 2011, a period of slow recovery, particularly in emerging markets. For each of these sub-periods we determine the contribution of exchange rate risk on the volatility of an investment made by an EMU-based investor in European countries. Second, we calculate the values for the λ parameter as in (3) using return variances based on a rolling window of 12 months and we observe the differences between the three sub-periods. In order to have a better view on the trend of lambda we adjust the time series by applying the Hodrick-Prescott filter, a smoothing method that is widely used for obtaining a smooth estimate of the long term trend component of a series of data. The method was first proposed by Hodrick and Prescott (1997) for postwar U.S. business cycles. The tool uses a two-sided linear filter that computes the smoothed series s of a series y by minimizing the variance of y around s , subject to a penalty parameter that constrains the second difference of s .

To analyze the benefits derived from hedging exchange rate risk in European diversified portfolios, we compute 1-month synthetic forward rates using Interest Rate Parity between local currencies and Euro. Using unhedged and hedged stock market returns we derive efficient frontiers that show whether the performance of well diversified portfolios made up of stocks from European developed markets could be enhanced by including stocks from emerging markets and by hedging currency risk.

We use monthly data on stock indices and exchange rates between January 2005 and February 2011. For eleven markets in the EMU area we use the MSCI EMU Index (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, and Spain) denominated in Euros. For three other developed countries in Europe (Norway, Switzerland and United Kingdom) and five European emerging markets the domestic market indices are collected from the Morgan Stanley Capital International (MSCI) Database in local currencies and Euro. Three of the emerging markets are EU members (Czech Republic, Hungary and Poland) and the remaining two are Turkey and Russia. The exchange rates against the Euro are collected from the Pacific Exchange Rate Service. The risk-free interest rates are collected from the CEIC Database and they are T-bill rates, Central Banks' rates or EURIBOR with 1-month maturity, depending on the country.

4. Results and discussion of findings

Overall, investments made in all markets would have provided the euro-based investor with positive and better mean returns except for United Kingdom compared with the mean return that would have been

obtained in the EMU. This happened although the average changes in foreign currencies against the euro over the period do not necessarily indicate appreciations of the currencies against the euro – it is worthwhile to note that CEE currencies except for Polish zloty incurred appreciations against the euro, as well as the British pound, while other currencies depreciated on average against the euro over the period. At the same time, all these markets except for Switzerland and United Kingdom would have exposed the euro-based investor to higher risks, indicated by higher standard deviations of returns compared to EMU. It is interesting to note that skewness is negative for all markets, including EMU, which denotes asymmetric return distributions, with a higher chance of returns lower than the mean return. The kurtosis values, as skewness values, indicate non-normality of returns and leptokurtic distributions of returns, thus confirming previous research on capital markets return attributes. The mean changes in exchange rates were low for all currency pairs, and currency volatility was smaller compared to the local markets' returns volatility denominated in euro, suggesting that currency risk might not have been a significant contributor to the overall risk of an investment outside EMU.

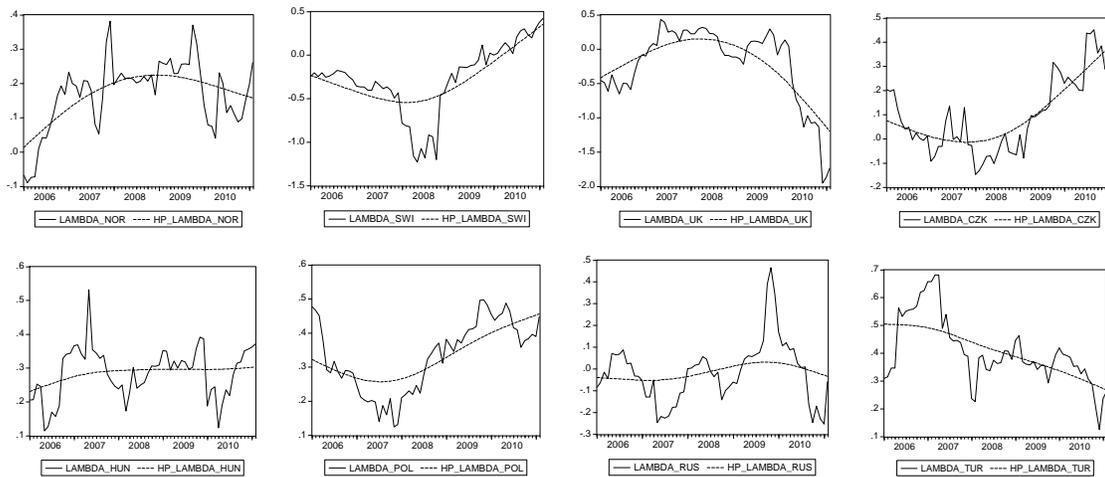
Besides the values of standard deviations for local returns compared to EMU we were interested in investigating the effective contribution that the volatility of local currencies exchange rates has on the euro-denominated European market returns. When the overall period is considered, unhedged returns in euro were more volatile than returns denominated in local currencies in all countries except for Switzerland, which suggests that currency risk contribution to an investment in these countries was an additional contributor to the risk of the foreign market for a euro-based investor. Interestingly, though, hedged returns in euro were higher than unhedged returns only for Norway and Switzerland, but the same thing may not be said about their variance: in four countries the variance of hedged returns in euro was higher than the variance of unhedged returns (Switzerland, United Kingdom, Czech Republic and Russia), while in the remaining countries (Norway, Hungary, Poland and Turkey) the situation was reversed. Overall, as indicated by lambda values, the contribution of exchange rate risk to the risk of an investment made in these European countries was positive, except for Switzerland, and varied between 1.73% in the case of United Kingdom to 41.29% for Turkey. Also, lambda values were higher for emerging countries than for developed ones, except for Russia (7.19%) and Norway (21.6%).

When one observes the contribution of currency risk over the three sub-periods interesting findings emerge. In the first sub-period, which may be called the “normal” period, the contribution of exchange rate risk to the risk that a euro-based investor would be exposed to by investing in our markets is positive in four of them (Norway, Czech Republic, Hungary, Poland and Turkey), with values ranging between 8.95% for Czech Republic and 52.56% for Turkey. For three countries, namely Switzerland, United Kingdom and Russia, currency risk has actually diminished the overall volatility of the investment in these countries when measured in euro, the largest negative contribution belonging to Switzerland (-21.33%). Interestingly, although unhedged returns in euro were higher than hedged returns for all countries, the variance of hedged returns was higher than the variance of unhedged returns in all countries except for Hungary and Poland, which is a finding that contradicts somehow the general belief that hedging should reduce risk. The second sub-period brought bad news in terms of returns, as all mean local and euro returns were negative, except for Switzerland, the variance of euro returns was higher compared to local returns. The contribution of currency risk was positive in all countries except for Switzerland, where changes in the exchange rate diminished the overall volatility of investments measured in euro; the lowest positive contribution of currency risk, of 7.10%, was recorded for Russia, and the highest for Poland, 37.56%. Again, no pattern in terms of the difference between the volatility of unhedged versus hedged returns in euro may be detected across our sample of countries: in four of them – Norway, Hungary, Poland and Turkey – unhedged returns were more volatile than hedged returns, and in the remaining four – Switzerland, United Kingdom, Czech Republic and Russia – unhedged returns proved to be less volatile. This confirms that full hedging against currency risk in times of crisis was profitable in terms of returns, but not necessarily in terms of risk, and that the effectiveness of a hedging policy is very much country-specific. The third sub-period considered, which we named the “slow recovery” period, has features that resemble to some extent the previous two sub-periods. As such, hedged returns were on average smaller than unhedged returns in all countries, and the variance of returns denominated in euro was higher than the variance of local returns, as evidenced by the positive contribution of currency risk in almost all countries, with the exception of United Kingdom (replacing Switzerland): the highest contribution is observable for Poland (45.60%) and the lowest for Russia (5.08%). One more time, no pattern regarding the variance of hedged versus unhedged returns may be identified: the variance of hedged returns is higher for five countries (Switzerland, United Kingdom, Czech Republic, Russia and Turkey) and lower for the remaining three countries (Norway, Hungary and Poland).

Wrapping-up our analysis over the three sub-periods, a few noteworthy points emerge: (1) the contribution of currency risk to an investment made by a euro-based investor in other European countries was highly fluctuating over the entire period and the three sub-periods under consideration, regardless of the country of investment; (2) in general, the currency risk contribution was positive – the exceptions are Switzerland for the overall period and the first and second sub-periods, United Kingdom for the first and third sub-period and Russia for the second sub-period -, indicating that currency risk adds to the local market risk; (3) in the case of emerging markets we find a higher contribution of currency risk to the overall investment volatility, which generally adds to higher local market risk to make them more volatile for a euro-based investor.

A better perspective on the fluctuation of currency risk contribution over our period of analysis is shown in Figure 1, by the rolling lambdas for the eight countries. Lambda shows a high volatility over the years, with higher values of standard deviation for (rather curiously) Switzerland and United Kingdom. When a Hodrick-Prescott filter is applied, no definite pattern is observable across our sample of countries: in three of them we observe a decrease in the currency risk contribution until the end of 2007, followed by an increase afterwards (Switzerland, Czech Republic and Poland), in two of them we notice a decline in lambda until the end of 2007 followed by a subsequent increase (Norway and United Kingdom), in another pair of two countries (Hungary and Russia) there is no trend identifiable, and for one country only (Turkey) we observe a decrease in lambda over time. These findings strengthen the previous observation that currency risk contribution is fluctuating and specific to each country and, therefore, difficult to predict.

Figure 1:. Rolling lambda and Hoddrick-Prescott filters, February 2005 – February 2011



Note: The first observation, showed as January 2006, is based on the variances in the first 12 months of the interval, starting in February 2005.

In order to examine the potential benefits derived from adding emerging markets and hedging exchange rate risk in European diversified portfolios, during the overall period and the three sub-periods, we also considered portfolios made of investments in EMU countries and investments in the other European markets, as follows: a portfolio that includes EMU and the three developed countries (Norway, Switzerland and United Kingdom), a portfolio that includes EMU and the five emerging markets (Czech Republic, Hungary, Poland, Russia and Turkey), and another portfolio that includes EMU and all eight European countries.

We thus study the impact of hedging currency risk in diversified portfolios over the entire period and the three sub-periods. Therefore, we generated forty-eight efficient portfolio frontiers using unhedged and hedged euro returns while both allowing and not allowing short-selling: unhedged frontiers of EMU and developed markets; hedged frontiers of EMU and developed markets; unhedged frontiers of EMU and emerging markets; hedged frontiers of EMU and emerging markets; unhedged frontiers combining EMU, developed and emerging markets; and hedged frontiers combining EMU, developed and emerging markets. When considering the short-selling case, the maximum amount allowed was set to -1 (100%) for each asset. Our analysis was also developed to make allowance for the circumstances when the short selling operations cannot be performed due to regulation grounds. The analysis of our findings, illustrated in Figures 2 to 5, follows.

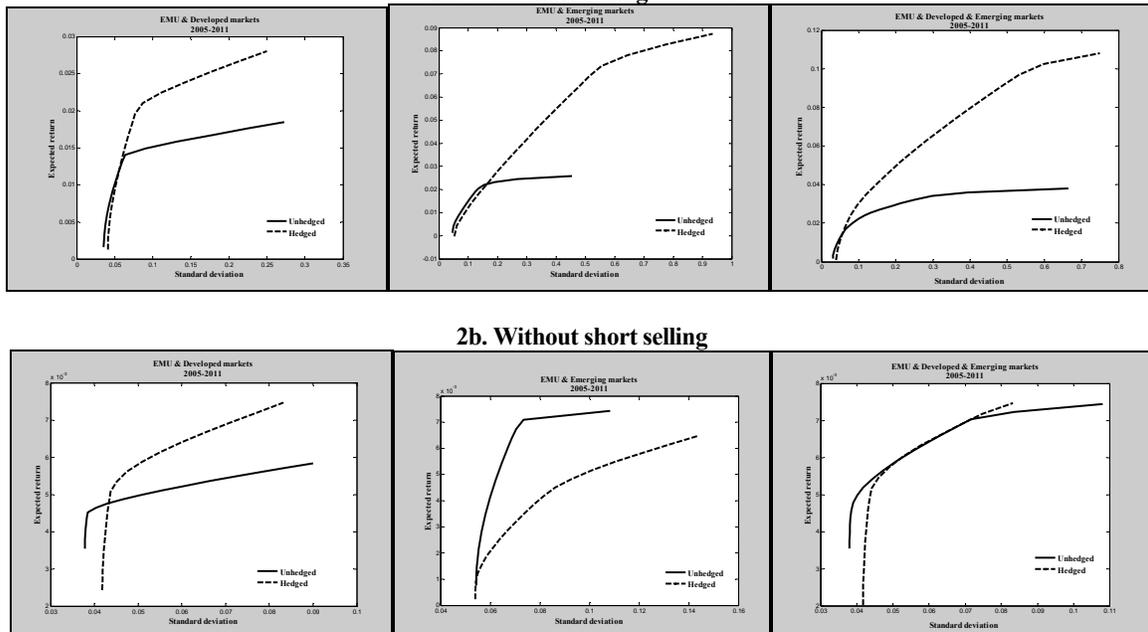
The overall period: January 2005 – February 2011

For the overall period, when allowing short-selling, it looks that the performance of the portfolios formed of developed, emerging and by combining developed and emerging markets could be enhanced by hedging currency risk, especially for higher levels of risk (see Figure 2a). When we exclude the short-selling possibility, the display below (see Figure 2b) uncovers a different perspective: while for portfolios diversified among developed markets stocks, for high level of risk investors would have been better off if hedging currency risk, the unhedged portfolios formed by including emerging markets stocks show a better performance than the hedged ones. As far as the portfolios made up of stocks from developed and emerging markets are concerned, investors that tolerate low and high levels of risk would have been better off if not hedging currency risk, while for the middle levels of risk there seems to be a situation of indifference, since the unhedged and hedged efficient frontiers are superimposed.

The first sub-period: January 2005 – September 2007

When analysing this sub-period, which we considered the “normal” period, and permitting short-selling (see Figure 3a), we find an expected pattern for all the three pairs of efficient frontiers: the portfolios’ performance is enhanced by hedging currency risk, regardless of whether they are formed by stocks from only developed, only emerging or developed and emerging markets.

Figure 2: Efficient frontiers, overall period
2a. With short selling allowed



When comparing with the no short selling cases (see Figure 3b), for the portfolios formed only by stocks from developed markets, the efficient frontiers cross each other: for low levels in returns there seems that investors would have been better off by not hedging currency risk, while for high levels of risk the opposed situation should have been considered. For portfolios formed of EMU and emerging countries and of developed and emerging countries, respectively, not hedging currency risk would have been the proper choice. Interestingly, during the normal period, as for the overall period, for intermediate levels of risk, the unhedged frontier overlays the hedged frontier.

The second sub-period: October 2007 – May 2009

The analysis performed for the turbulent period reveals that, when allowing short-selling (see Figure 4a), for the portfolios formed with stocks from developed markets and for those formed with stocks from developed and emerging markets, currency hedging enhances the risk-return performance. The case of the portfolios formed by stocks from emerging markets is different in that hedging seems to be a good idea only for high levels of risk. A parallel analysis, undertaken without allowing short-selling (see Figure 4b), reveals an interesting situation for the portfolios formed only by stocks from European developed markets:

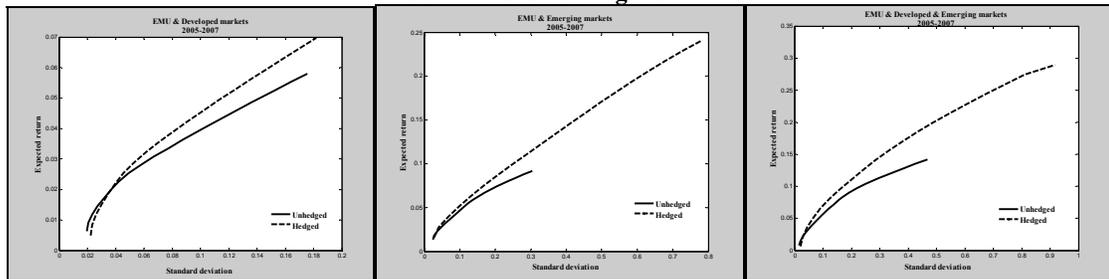
introduction of constraints allows only for one efficient unhedged portfolio to be identified. Therefore, it is inconclusive whether is better to hedge currency risk or not. For the other two situations, regarding the portfolios made up by stocks from EMU and emerging markets and by stocks from emerging and developed markets, hedging currency risk appears to have enhanced the performance over the sub-period.

The third sub-period: June 2009 – February 2011

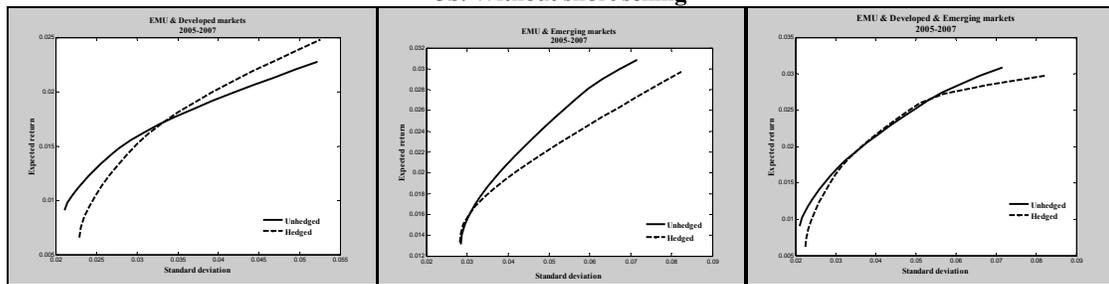
When investigating the recovery period and permitting short-selling (see Figure 5a) it looks as if the performance of the portfolios is improved when hedging currency risk, except for investors tolerating low levels of risk that choose to invest in portfolios formed by stocks from developed markets. Opposite to this situation, when adding the constraint of no short selling in deriving the efficient frontiers (see Figure 5b), it appears that investors should not hedge currency risk.

Therefore, it seems that, overall, when allowing short-selling, hedging currency risk seems to be a good choice whether investing in stocks from developed, emerging or developed and emerging markets. However, the constraint of no short-selling alters this pattern. Hence, for the portfolios formed by stocks from developed markets there is an obvious performance shift from the lower levels of risk, when not hedging currency risk appears to be the appropriate alternative, to the higher levels of tolerated risk, when, obviously, hedging currency risk could be translated into an advantage.

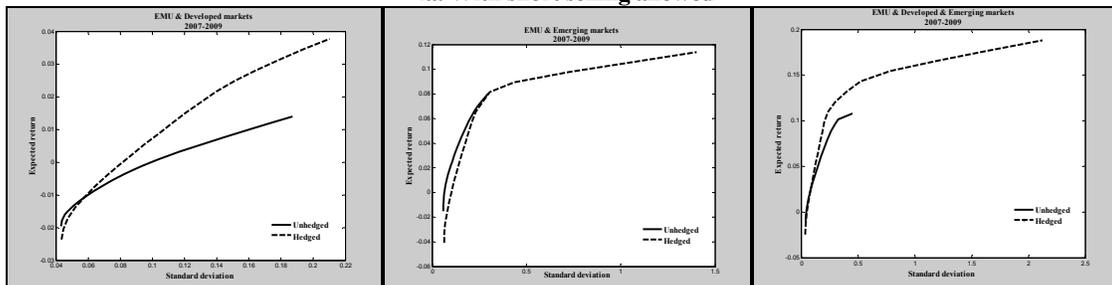
**Figure 3: Efficient frontiers, first sub-period
3a. With short selling allowed**



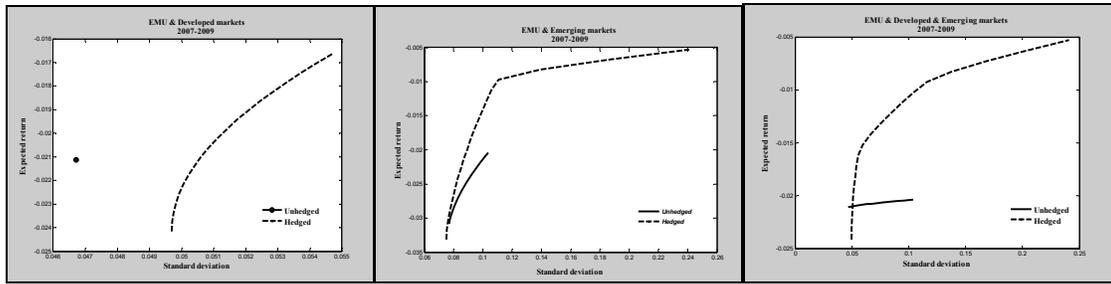
3b. Without short selling



**Figure 4: Efficient frontiers, second sub-period
4a. With short selling allowed**

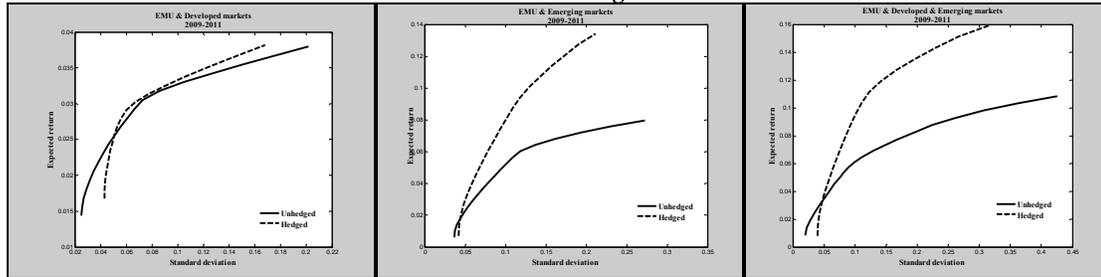


4b. Without short selling

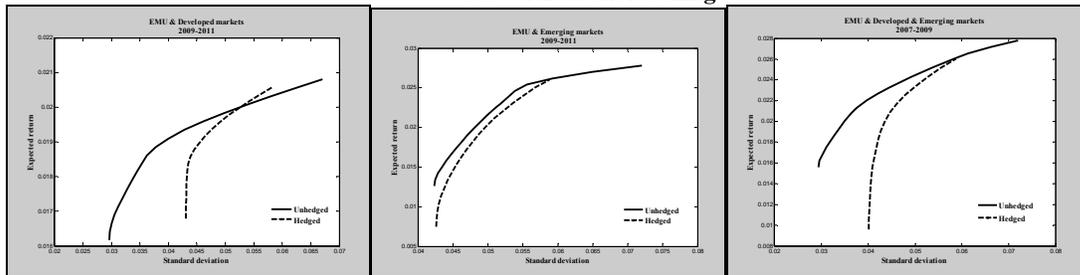


For the overall period as well as for the normal and recovery ones, it appears that an EMU-based investor that decides to diversify by adding emerging markets to an EMU portfolio should not hedge currency risk, while, during turbulent times, as expected, it is worth hedging his position. An overlook of the efficient frontiers derived from stocks of developed and emerging markets reveals that overall, for the entire period and for the first and third sub-period, an investor is better off if not hedging currency risk, with minor exceptions when considering a certain degree of risk tolerance. However, as predicted, during crisis periods, it is advisable that an investor choose to hedge currency risk.

Figure 5: Efficient frontiers, third sub-period
5a. With short selling allowed



5b. Without short selling



5. Conclusions

A few noteworthy conclusions emerge out of our work: (1) the contribution of currency risk to an investment made by a euro-based investor in other European countries was highly fluctuating over the entire period and the three sub-periods under consideration, regardless of the country of investment; (2) in general, the currency risk contribution was positive indicating that currency risk adds to the local market risk; (3) in the case of emerging markets we find a higher contribution of currency risk to the overall investment volatility, which generally adds to higher local market risk to make them more volatile for a euro-based investor.

When allowing short-selling, hedging currency risk seems to be a good choice whether investing in stocks from developed, emerging or developed and emerging markets. However, the constraint of no short-selling alters this pattern. Hence, for the portfolios formed by stocks from developed markets there is an obvious performance shift from the lower levels of risk, when not hedging currency risk appears to be the appropriate alternative, to the higher levels of tolerated risk, when, obviously, hedging currency risk could be translated into an advantage. For the overall period as well as for the normal and recovery ones, an EMU-based investor that decides to diversify by adding emerging markets to an EMU portfolio should not hedge currency risk, while, during turbulent times, as expected, it is worth hedging his position. An overlook of the efficient frontiers derived from stocks of developed and emerging markets reveals that overall, for the entire

period and for the first and third sub-period, an investor is better off if not hedging currency risk, with minor exceptions when considering a certain degree of risk tolerance. However, as predicted, during crisis periods, it is advisable that an investor should choose to hedge currency risk.

6. References

- Aggarwal, R. (1981) Exchange rates and stock prices: a study of the US capital markets under floating exchange rates, *Akron Business and Economic Review*, 12, p. 7-12
- Bartov, E., Bodnar, G. (1994) Firm valuation, earnings expectations, and the exchange-rate exposure effect, *Journal of Finance*, 49(5), pp. 1755-1788
- Brana S., Prat S. (2010) The introduction of emerging currencies into a portfolio: Towards a more complete diversification model, *International Economics* 121, pp. 5-24
- Bugar, G. and R. Maurer (2002) International Equity Portfolios and Currency Hedging: The View Point of German and Hungarian Investors, *Asian Bulletin*, 32 (1), pp. 171-197
- Chakrabarti, R., Roll, R. (2002) East Asia and Europe during the 1997 Asian collapse: a clinical study of a financial crisis, *Journal of Financial Markets*, 5 (1), pp. 1-30.
- Choi, J., Prasad, A. (1995) Exchange rate sensitivity and its determinants: A firm and industry analysis of U.S. Multinationals, *Financial Management*, 24 (3), pp. 77-88
- De Jong, A., Ligterink, J., Macrae, V. (2002) *A Firm-Specific Analysis of Exchange-Rate Exposure of Dutch Firm* Erasmus Research Institute of Management Working Paper
- El-Masry, A. (2003) *The Exchange Rate Exposure of UK Nonfinancial Companies: Industry-Level Analysis* Manchester Business School Working Paper
- Eun, C.S., Resnick, B.G. (1994) International diversification of investment portfolios, US and Japanese perspective, *Management Science*, 40 (1), pp.140-60
- Gao, T. (2000) Exchange rate movements and the profitability of U.S. multinationals, *Journal of International Money and Finance*, 19 (1), pp. 117-134
- Hauser, S., Marcus, M., Yaari, U. (1994) Investing in emerging stock markets: is it worth while hedging foreign exchange risk?, *The Journal of Portfolio Management*, 20 (3), pp. 76-81.
- Hodrick, R.J., Prescott, E.C. (1997) Postwar U.S. Business Cycles: An Empirical Investigation, *Journal of Money, Credit and Banking*, 29 (1), pp. 1-16
- Horobet, A., Dumitrescu, D.G., Barsan, A.M. (2010) *Investors' exposure to currency risk in Central and Eastern Europe: are turbulent times different?* working paper, presented at IJAS Conference Rome
- Horobet, A., Dumitrescu, S. (2008) Insights into Central and Eastern European countries competitiveness: on the exposure of capital markets to exchange rate risk, *Review of Economic and Business Studies*, 2, pp.107-126
- Horobet, A., Lupu, R. (2005) Expunerea la riscul valutar a firmelor românești : o analiză sectorială?, *Oeconomica*, XIV (4), pp. 107-136
- Horobet, A., Lupu, R. (2006), *Real exchange rates and corporate performance: a comparative analysis for CEE countries*, Proceedings of the 2006 International Conference on Commerce, Academy of Economic Studies Bucharest, Romania, pp. 272-281
- Jorion, P. (1985) International Portfolio Diversification with Estimation Risk, *Journal of Business*, 58 (3), pp. 259-278
- Jorion, P. (1990) The exchange rate exposure of U.S. multinationals, *Journal of Business*, 63 (3), pp. 331-345
- Kenourgios D., Samitas A., Paltalidis N. (2011) Financial crises and stock market contagion in a multivariate time-varying asymmetric framework, *Journal of International Financial Markets, Institutions and Money*, 21 (1), pp. 92-106
- Koutmos, G., Martin, A. (2003) *First- and Second-Moment Exchange Rate Exposure: Evidence from U.S. Stock Returns*, *The Financial Review*, 38 (3), pp. 455-471
- Kyimaz, H. (2003) Estimation of foreign exchange exposure: an emerging market application, *Journal of Multinational Financial Management*, 13 (1), pp. 71-84
- Levy, H., Lim, K.C. (1994) Forward Exchange Bias, Hedging and the Gains from International Diversification of Investment Portfolios, *Journal of International Money and Finance*, 13 (2), pp. 159-170
- Lien, D., Zhang, M. (2008) A Survey of Emerging Derivatives Markets, *Emerging Markets Finance and Trade*, 44 (2), pp. 39-69

- Middleton, C.A.J., Fifield, S.G.M., Power, D.M. (2008) An investigation of the benefits of portfolio investment in Central and Eastern European stock markets, *Research in International Business and Finance*, 22, pp. 162-174.
- Niklewski J., Rodgers T. (2011) *International portfolio diversification and the 2007 financial crisis: will structural change in equity market correlations have a lasting impact on optimal portfolio selection?*, Economics, Finance and Accounting, Applied Research Working Paper Series
- Patev, P., Kanayran, N., Lyroudi, K. (2006) Stock market crises and portfolio diversification in Central and Eastern Europe, *Managerial Finance*, 32 (5), pp. 415-432.
- Shetty, A., Manley, J. (2006) Analysis of currency impact on international investment, *Managerial Finance*, 32 (1), pp. 5-13.
- Soenen, L.A., Henningan, E.S.(1988) An Analysis of Exchange Rates and Stock Prices: the U.S. Experience between 1980 and 1986, *Akron Business and Economic Review*, 19, pp.7-16

HERITAGE, SHOULD BE SENT TO THE ACCOUNTING ANTIQUITIES MUSEUM?

ILINCUȚĂ Lucian – Dorel

Ph. D. Assistant professor, Faculty of Financial and Accounting Management, Spiru Haret University, Bucharest, Romani, lucian_ilincuta@yahoo.co.uk

Abstract: *At the basis of the accounting subject, the heritage of a natural person or a legal entity has always been and is. Accounting history should begin with words: from the beginning there was the account (ratio), supplemented with the idea: from the account was born accounting. Accounting has arisen from the need and desire to respond in the information and decision terms to the assessment and management of the heritage issue separates on the economic entities.*

Key words: property, account, asset, liability, use, resources, controlled resource, double representation, double counting, double entry.

JEL classification: M 41, M 40, B 21, B 22

1. Introduction

As we know, all the time, at the basis of **the accounting subject** there was and is the **heritage** to a natural person or legal entity (Bojian, 2003, p. 19). Thus, the accounting has arisen from the need and desire to respond in the information and decision terms to the assessment and management of the heritage issue separates on the economic entities.

Accounting history should begin with words: **from the beginning there was the account (ratio)**, supplemented with the idea: **from the account was born accounting**. We note the Romanian idea: "to make two columns in the cash registers, in order to separate the receipts and the payments, titling them *acceptum* (credit) and *expensum* (flow)", without raise the problem of the double entry accounting (Calu, 2004, p. 30).

2. Some historical elements about the accounting

The business assessment started once the traders wanted to know the size of their wealth in the economic entities, or what parts of their property were sold, donated, inherited, expropriated or subjected to taxation. The accounting history is even older. Its beginnings seem to have originated in Sumer. Accounting is the oldest of the all management sciences (Felegă, 2005, p. 22). The first dated economic assessments (business) seem to be since 2000 BC and were made by the Sumerians. The economic assessments of the business, in whole or in the part, could support the accounting documents of the time.

In the oldest *legal code*, known in the history as that of Urnammu, the Sumerian King (2064 - 1955 BC.), founder of the third dynasty of Ur, it was provided the obligation of the accounting evidence for traders. This requirement was mentioned in all the subsequent rules of law. In the ancient accounting the material wealth of the company (enterprise) was separate and independent from the claims and liabilities (debts), which belonged directly to the owner and, in case of purchase and sale transactions still remained on his behalf. There were changed the ownership only for the material elements of the heritage. The basis to calculate the price for the economic entity constituted a sum of the individual property items, expressed in cash. To calculate this price, the material goods belonging to the entity were inventoried to the varieties and qualities, centralized in the lists, individually valued and summed to obtain the total value.

The goods values have suffered and are suffering various fluctuations, over the time, for several reasons, among which:

- influence of the market supply and demand over the property value;
- changing of the measurement unit, money, due to the deflation or inflation;
- Changing methods of production, transport and purchase of the economic goods.

For these reasons, even today, the assessment can be made only to a certain *reference date*.

In the Middle Ages, in the Islamic East, as opposed to Western European countries, there were known the average prices for all goods, prices for the current traffic value. They had the character of the market prices because their formation was a result of supply and demand action.

In the European countries of the Middle Ages, the values forming on the property (material goods) was mainly directed towards the costs. Between the factors that contribute to pricing (value of trading) there was taken into account the loss of earnings through the sale of the economic goods. In terms of costing things, no much have changed even today. Thus, the **historical cost** is the origin evaluated cost, measured and recorded at the entry of assets and debt creation.

From another perspective, the historical cost is a **fair value (current)** from the time of creation of assets or liabilities. In the monetary terms, this represents the purchasing power, "sacrifice" that was done to bring property into the business assets. From the speciality literature (Heyne, 1991, in Ristea, 2003, p. 36) is off the idea that any cost or accepted sacrifice is an unused opportunity because the company, to work, must give up because its resources are not available for the alternative use.

Accounting has not arisen and, especially, did not advance, unless that scarcity of resources has imposed an increasing efficiency of their allocation to meet the alternatives needs of the people and, in the modern times, due to growing the information needs for making better decisions and, as has been intuited over five hundred years, at least to assess the impact of decisions: "The accounts are nothing more than express written order of business that a shopkeeper has in his mind and if he complies with this system he always knows everything about its business and will know exactly if business goes well or not" (Paciolo in Dobroțeanu, 2004, p. 10).

At the end of the Middle Ages, the traders have gone from simple bookkeeping entry to the double entry, the claims and liabilities (debts) being attached to the economic entity, which was a great step forward for assessment. The difference between the gross patrimony and liabilities (debts) is the net patrimony or the own capital (the residual interest of owners under the Accounting framework IASB) and the corresponding value of the company (entity). Meanwhile, in terms of the calculation methodology, the owner's personal property was separated by the social entity property. With double entry accounting, there was calculated the enterprise value, not only in terms of the own capital measurement, but also in terms of the related material goods. The value was given (and is) by the changes of the own capital as the size of gains or losses.

3. The heritage in the accounting of yesterday, today and tomorrow

Returning to the notion of heritage, in the literature, there are three concepts in definition and analysis of the heritage: legal, economic and economic and legal concept of the property (Ionescu, 2000). In accordance with the economic and legal concept, the **heritage** expresses the economic assets accumulated by a person or entity (wealth, use resources) and the legal rights and obligations (capital as property relationship or resources). Also we keep in mind that not every property is delimited and formed the subject of accounting. It becomes the object of accounting representation only if the separated heritage economic values are invested in the economic activity to obtain goods and services, subject to sales and purchase transactions or administrative and the socio-cultural activities which meet the specific needs and rational of the human society.

In the accounting life, the **trend showed** in the last period, becoming more and more for **challenging the patrimonial accounting model** or the **patrimony principle** involving the carrying amounts required to be in the property values. However, this trend knows a number of moderating. The events of this nature are rooted in the international harmonization and Anglo-Saxon normalization. Thus, the heritage **assets and liabilities** and the **expenses and income** as the situation components of the net patrimony are increasingly defined in terms of the **controlled resources** categories. **The property rights**, used as part of the transactions and events recognized in financial statements is sometimes associated with the **right for using**. In the accounting values, the property or wealth is not measured by the property titles (really!?) and by the effective using of the resources, even if they are the property of others.

In this context and at the beginning **of the** new millennium raises the question: The heritage, should be sent to the accounting antiquities museum? The famous experts (Ristea, 2003, p. 19) still believe that the words "**controlled resources**" cannot replace (supports) the consistency of relations between law and accounting. As the IAS 1 Presentation of the Financial Statements, the events and the transactions should be judged and recognized in accounting not only in relationship to their legal determining, or only in terms of their economic determination. The accounting information must disclose the economic substance of the events and transactions and not only of their legal form.

Any controlled resource by the enterprise arising from past events or transactions, must take a legal form, otherwise acquire such a legal form, must, however, reported to the legal element to be

recognized in some way. In other words, the controlled resource drawn into the economic circuit, when it is invested and used by the enterprise becomes its heritage.

Referring to the heritage treatment as an obsolete accounting category, leading specialists of the accounting system in Romania (Ristea, 2003, p. 19), believe that it loses sight of three basic truths such as:

- The economic goods are, by their substance, the resources and they are based on the resources. Access to the resources using takes place between individuals and/or legal. These relationships, by their legal, are the property rights and economically, they are relations of use.
- The economic prevalence formula over the legal is interpreted in a linear form. No one can speak of a prevalence of determinations on each other. To overcome this condition is sufficient appeal to IAS 1 Presentation of the Financial Statements. As the standard is presented for information to be credible must reflect the economic substance of the events and transactions and not the legal form. So no prevalence of one over another but **convergence and complementary**.
- The accounting literature knows two concepts in defining the heritage, as a subject of accounting, legal and economic. According to the legal concept, the heritage is a complex of elements that personalize the one hand, the economic assets of the entity, on the other hand, rights and obligations of economic value of the same entity.

The defining the heritage through the pair of categories of the economic goods and rights and obligations is not an economic approach. To the extent that rights and obligations are invoked as the property relations, the economic goods are already legally treated. In these circumstances, the economic goods, the rights and obligations are necessarily the legal values. According to the economic concept, the heritage should be based on the accounting structure of the economic value owned and controlled by an entity, like a natural or legal person. The economic delineation of the heritage is revealed by the own equation of the economic values defined in terms of resources, like origin and financing of them and uses the destination or investment of the same values, so, **uses = resources**.

In view of presented above, in the spirit of the heritage theory, formulated by teachers like **Constantin G. Demetrescu, Spiridon Iacobescu and Al. Sorescu**, which is in the Romanian existing accounting literature from almost a century, we present from the work: *The Balance of the Economic Enterprises* (Diaconescu, 1948, p. 58), an enlightening piece.

In the Romanian accounting literature, we note today two theories on the accounts like patrimonial theory, formulated by Professor Spiridon Iacobescu and Al. Sorescu and PhD Professor C.G. Demetrescu and the economic theory, formulated by Prof. I.N. Evian, inspired by the German literature, especially after Nicklisch.

1. The **patrimonial theory** is shared by the majority of Romanian authors dating back almost three decades. It is based on the economic and legal heritage content. In the legal meaning, the heritage is all the rights and liabilities of a person denominated in the coin. In the economic meaning, the property consists from the rights objects and objects of bonds.

From the association of the legal and economic aspect result the heritage concept that has both a full legal content (a right or obligation) and an economic content (a good or a value). So, the existence of the right is dependent on the object and vice versa (Demetrescu, p.74 in Diaconescu, 1948, p. 58). The heritage has a legal content with an economic content. The legal content is equal to the economic substance and is dependent and cannot exist without each other. In this way, they gather together economic quantity, as those goods attached to the person and the legal amount as patrimonial rights and the heritage obligations that each person has under the law (Iacobescu and Sorescu, p. 12 in Diaconescu, 1948, p 58).

Contrast to the economic theory based on the balance sheet, the patrimonial theory is based on the heritage, which it examines all components, presented in accounting through accounts, leading eventually to the balance sheet, which include the group values accounts, the group accounts of unfavorable results, the group of accounts for the debtor people and, finally, the group of orders accounts. In the liability we find the accounts group of funds, the accounts group of the borrower, the accounts group for the favourable results and, finally, the group of accounts orders.

2. The **economic theory** dating back only a few years, has as a starting point the balance sheet, which assigns a statistics function as to show, at a time, the economical and financial situation of the enterprise (Evian, p.77 in Diaconescu, 1948, p 58)

On the left named the asset, the balance sheet includes parts that make up the property company, that means that it works to achieve its goal, and on the right named passive the capital of the company, both the self and the borrower, so that all the means which have been put at its disposal for action.

Below, we put for your attention some elements of the patrimonial accounting model (Bojian, 2004, p. 272), challenged increasingly in the recent years, both in the literature of Romania and the foreign origins Anglo-Saxon, which we hope to give thoughts.

- From genesis to the present, the accounting has got a real “professional reputation”, by its law-like, logical, objective, truth and knowledge and its information presentation by the economic reality, for which it was considered “compass of the enterprise”. This was possible due to strict compliance in practice of the principles that guide: the double representation, double recording, the own self-accounting.

In the last decades of the XX century, we assist international and national to a heavy pollution of the driven accounting by the interests of employers, the tax or others, all aimed at cover the economic reality of the enterprise, “sweetening” the result, or the contrary, “worsening” it, that depends on the interests concerned, and its present in a distorted form of so-called “fair value”. The fair image is in fact an unfortunate combination of words to describe the economic reality (the financial position and performance to use two phrases call the General Accounting Framework IASB) knowing that faithfulness is a characteristic of beings, people, animals and no for things, in any case.

In defence of the "fair value" the new principles have been created or reformed of some already known and accepted. For the prevalence of the economic over the legal we do not think that is an accounting principle. This is because there is a perfect economic and legal equality. Just disregard the legal form is distorting the economic reality and the accounting entity loses control the wealth of the accounting entity. Accounting records only economic realities recorded in documents, not in other documents (birth certificates, death, prenuptial, wedding etc.)

- As we saw earlier, in the economic interpretation, the heritage is based on the uses and resources considered to be two equal size in terms of value that can be written as an equality uses = resources and is named the balance economic equation of the heritage. Starting from this equation the parts of the balance sheet - assets and liabilities came to be interpreted in terms of uses and resources. Such the uses would be the practical use of the entity capital by various categories of goods, which represent assets (A), and the resources would be sources of the assets origin, respectively the sources of funding, as the own capital and the borrower, which would be passive (P). That is why it was such definition: “an asset is a resource” (The General Accounting Framework IASB and OMPF 3055/2009). From an accounting perspective, an asset (or use) is not a liability (a resource). **Such interpretation creates confusion in the minds of those who want to learn accounting.**

Rather than try to solve this issue better the heritage was excluded as a subject of accounting, were excluded terms of active and passive as they were best replaced by the assets, liabilities and the own capital, and the equation **Active = Passive** was replaced by equation **Assets = Own capital + Liabilities** or **Assets - Liabilities = Own capital**, specific to the balance sheet of the list type.

It could not replace the accounting function of the asset accounts, liabilities and bi-functional and their operating rules. In other words remove what we do not agree and keep what we like because we have nothing to put in place, since the founder Luke Paciolo, the founder of the double representation and the double entry.

- Another approach of the contemporary accounting is to try replacing the term of economic or financial operation with those of the transaction or event. From what we know the transaction is convention, agreement, understanding, approval, etc. between the partners to give and receive something, and accounting does not record understanding (promises), but only the economic and financial operations, acts of trade, which took place as evidenced by written documents.

Here it should be noted the wrong way to write of the accounting formulas without the debit sums and the credit sums, without the following sign (%), or the complex accounting formulas such as the following accounts to the following accounts (% =%) are not accepted in the accounts of Romania.

4. Conclusions

The researching of the accounting heritage model should be revived the definition of the independent accounting law, a law to cover in a substantial priority analysis in relation to the law. The games played in this process are as good background games, as well as the form games (Ristea, 2003, p. 19). The legal category of the property cannot be dropped from its general structure able to homogenize

all the presented elements in the financial statements. What should be done is the economically defined, that as a mass that values in the monetary standard the resources and the uses of the controlled resources by an accounting entity.

5. References

- Belverd E. Needles, Jr., Henry R. Anderson, James C. Coldwel, (2001) *Principiile de bază ale contabilității*, Fifth Edition, Arc Publishing House, Chișinău.
- Bojian Octavian, (2003) *Bazele contabilității – 2003*, Economic Publishing House, Bucharest, p. 19.
- Bojian Octavian, (2004) *Contabilitate financiară a întreprinderii*, Universitară Publishing House, Bucharest, p. 272.
- Calu Daniela Artemisa, (2004) *Istoria și dezvoltarea contabilității în România*, PhD thesis, A.S.E. Bucharest, p. 30.
- CECCAR, (2010) *Ghid practic de aplicare a Reglementărilor contabile conforme cu directivele europene aprobate prin O.M.F.P. nr. 3055/2009*, CECCAR Publishing House, Bucharest.
- Demetrescu G. Constantin, (1945) *Organizarea și contabilitatea întreprinderilor*, SOCEC & Co. Publishing House, S.A.R., Bucharest.
- Demetrescu G. Constantin, (1948) *Tratat de contabilitate*, Tenth Edition, p. 74 in Diaconescu F. Alexandru, *Bilanțul întreprinderilor economice*, VOL. I *Generalități – Tehnică – Prezentare – Analiză*, „UNIREA” Printing House, S.A.R. – Bucharest, p. 58.
- Diaconescu F. Alexandru, (1948) *Bilanțul întreprinderilor economice*, VOL. I *Generalități – Tehnică – Prezentare – Analiză*, Tipografia „UNIREA”, S.A.R. – Bucharest, p. 58.
- Dobroțeanu Laurențiu, (2004) *Contabilitatea între istorie și actualitate*, PhD thesis, A.S.E. Bucharest.
- Duțescu Adriana, (2004) *Politici contabile de întreprinderi*, CECCAR Publishing House, Bucharest.
- Evian I. N., (1948) *Teoriile conturilor*, p. 77 and next, in Diaconescu F. Alexandru, *Bilanțul întreprinderilor economice*, VOL. I *Generalități – Tehnică – Prezentare – Analiză*, „UNIREA” Printing House, S.A.R.– Bucharest p. 58.
- Feleagă Niculae, Feleagă (Malciu) Liliana, (2008) *Contabilitate financiară – o abordare europeană și internațională*, vol. I și II, Infomega Publishing House, Bucharest, p. 22.
- Heyne Paul, University of Washington, (2003) *Modul economic de gândire*, translation, Didactică and Pedagogică Publishing House, Bucharest, 1991, in Ristea Mihai, *Contabilitate financiară*, Margăritar Publishing House, Bucharest, p. 36.
- Iacobescu Sp. și Sorescu Al., (1948) *Curs de contabilitate generală*, Vol. II, p. 12, în Diaconescu F. Alexandru, *Bilanțul întreprinderilor economice*, Volume I *Generalități – Tehnică – Prezentare – Analiză*, „UNIREA” Printing House, S.A.R. – Bucharest, p. 58.
- IASB, (2011) *Standardele Internaționale de Raportare Financiară (IFRS)*, Ed. CECCAR, Bucharest.
- Ilincuță Lucian-Dorel, (2011) *Contabilitatea curentă și raportarea financiară a imobilizărilor corporale*, F.R.M. Publishing House, Bucharest.
- Ionescu Cicilia, (2000) *Bazele contabilității*, F.R.M. Publishing House, Bucharest.
- Luca Paciolo (Sistemul contabil descrie) în Dobroțeanu Laurențiu, (2004) *Contabilitatea între istorie și actualitate*, PhD thesis, A.S.E. Bucharest, p. 10.
- Ristea Mihai and colab., (2009) *Contabilitatea societăților comerciale*, vol. I și II, Universitară Publishing House, Bucharest.
- Ristea Mihai, Dumitru Corina-Graziella, (2003) *Contabilitate financiară*, Margăritar Publishing House, Bucharest, p. 19.
- ***Ordinul Ministerului Finanțelor Publice nr. 3055/2009 pentru aprobarea Reglementărilor contabile conforme cu directivele europene, ANEXA, M.Of. no. 766 and 766 bis on November, 10th 2009, with subsequent amendments.

DEVELOPMENTS IN THE BANKING INTEGRATION PROCESS: EVIDENCE FROM THE NEW EU MEMBER STATES

ILUŢ Bogdan

Ph. D. Research assistant, Faculty of Economics and Business Administration, Department of Business Administration, Alexandru Ioan Cuza University, Iaşi, Romania, ilut2k@yahoo.com

POTLOG Dorian

Ph. D. Student, Faculty of Economics and Business Administration, Doctoral School of Economics, Alexandru Ioan Cuza University, Iaşi, Romania

Abstract: *The integration of the banking sector represents a key component of the European integration process as most economies of the member states, especially the newly accepted ones, are finance through this. Thus, as the European Union has extended tremendously its membership in the last decade we consider important to underline the progress that has been achieved in the integration of the banking sectors of these new member states. In this context, the aim of our research is to present in a non-exhaustive manner the main dynamics and achievements that have been made in the development and integration of banking sectors from the new EU members states. In order to achieve this we have used an analysis based on the law of one price and the studying of the competition level that exists on the new European Union member states banking sectors.*

Key words: European banking integration, banking sectors, law of one price

JEL classification: G 21, F 15, F 39, N 24

1. Introduction

The creation of a common European single market for goods and services has represented the main focus at the European Union level in the last decades. In order to archive this, European institutions (like the European Central Bank or the European Commission) have argued that the integration of the goods and services sectors must be accompanied by the integration of the financial sectors, which will provide the backbone for the achievement of a dynamic European economic which would be able to sustain long term economic growth. The banking sector represent one of the least integrated components of the whole European financial sector, the challenges in its integration being enhance by the enlargement of the Union to 27 member states.

Taking these into consideration we consider the opportunity for a study that will underline the main dynamics regarding the development and integration of the banking sectors from the new European member states from Central and Eastern Europe (our panel is composed from Poland, the Czech Republic, Slovakia, Hungary, Romania and Bulgaria).

In order to archive this we have organised our research as following: the first part contains introduction remarks regarding the study undertaken, the second part presents the characteristics of the methodological approached used, while the third part is focused on the dynamic development of the banking sectors from the panel countries, part four provides an overview of the main achievements registered in the integration process of these sectors and the fifth part contains the final conclusions of the study.

2. Literature review

The researches undertaken so far regarding the dynamic of the European banking integration process have been focused on mainly three directions. Thus, a first set of researches is focused on the study of the volume of banking operations undertaken at cross-border level by the European banks (e.g. Gual, 2004, Perez et al., 2005). Most of the data employed in these researches were provided by the Bank for International Settlements, and are underling the fact that while in the bonds market and the money market of the European Union the level of cross-border operations are high, in the case of the banking sector, and especially of the retail banking segment least than 1% of the total transactions are undertaken at cross-border level. In general, this situation is used in order to emphasis the fact that in the case of the banking sector, and especially of the retail banking segment, the level of integration is very low, this approach didn't providing in our opinion sufficient and irrefutable arguments for such a statement. We consider that is relatively easy to provide arguments for a banking system perfectly integrated at

European level in which cross-border transactions are inexistent. For example, the threat of cross-border transactions could represent a sufficient strong reason for all the banks to rethink and re-price their products and services so that such operations would not be needed.

A second set of papers is focused on underling the cross-border mergers and acquisitions as a measuring element the integration of the European banking sector (see the researches of Köhler, 2007 and Köhler, 2009). The lack of mergers and acquisitions at cross-border level in the case of the European banking sector, comparatively with the mergers and acquisitions at domestic level represents another argument broth in favour of the low level of banking integration that exists in the European Union. Still, we consider that here also we can provide the same argument as in the case of the cross-border provision of products and services, the lack of a significant number of mergers and acquisitions at EU level in the case of the banking sector doesn't represents a sufficient and neither necessary argument for the existence of a low level of integration.

A third set of researches is focused on the study of the convergence level of interest rates as the main indicator for the evolution of the European banking integration process, the research undertaken by Adam et al. (2002) representing a good landmark in this area. In this research the authors study the interest rates for corporate and mortgages loans for a period of five years, concluding that after 1999 there is very little convergence for these types of loans. In their partial adjustment model they underline that the annual convergence speed for corporate loans is 2% while in the case of the mortgages is 7%. Taking into account this very low convergence rate Adam et al. (2002) conclude that the banking sector from the European Union are far from a full integration and more over there are any signs that could point out to a deepening of this process.

The annual report of the European Central Bank regarding the European Financial Integration process (2011) contains a multitude of data and information, like the cross-country standard deviation of the interest rates for different banking products offered by the banks in the euro zone, through which it is argued that the European banking sector is far from being fully integrated. Despite this, Affinito et Farabullini (2009) show that the interest rates dispersion is reduced one the variables that reflect the characteristics of the domestic lenders are tacked into account, like the exposure to risk, the available income or the dimension of the analysed banks. Also, they demonstrate that the interest rates dispersion is higher in the case of the euro zone that in the case of the different Italian regions. They concluded that: *“the interest rates in the case of the euro zone tend to be different because the banking products and service are different in each country and are determined by a series of national factors”*.

3. Methodological considerations

The European banking sector has suffered in the last decades o series of deep changes, which have been the focus of a large body of academic literature, these researches using both quantitative and qualitative approaches (see: Gual, 2004). The liberalisation and deregulation of the European financial markets, prompted by the London Stock Exchange Big Bang in the eighties, followed by European initiative aimed at enhancing the integration process and the development of pan-European payment systems, both for grows settlements and retail transactions, have put a tremendous pressure on the traditional way in which European banks carried out their activity.

Faced with these new challenges, the European banks have tried to adapt their business model by diversifying and universalising their products and services lines, offering both to retail and corporate costumers along with traditional instruments: insurances, the possibility to buy investment funds units, private banking instruments and the possibility to manage investment portfolios. Nevertheless, the outside competition has also grown as insurance companies and investment funds have developed their own products and services which offered viable alternatives for saving and investment in regard to the banking offer (Goddard et al., 2007). These developments have lead to a blurring of the demarcation line between banks and other financial intermediaries (see the study of Rajan and Zingales, 2003). At the same time, because of the changes determined by the European integration process, banks have developed a more widen pan-European network of branches and subsidiaries, which have helped the development of the overall European banking system thru an enhancement of the completion level, especially in the case of the new member states (Lensink and Hermes, 2004, p. 5).

Despite the many legislative initiatives at European level in order to harmonise the integration of the European banking sector and match the achievements from the monetary and bonds markets (Baele et al., 2004; Manna, 2004), most of the academic literature underlines modest progresses in this direction (Dieckmann, 2006; Staikouras et al, 2008).

The main challenges identified by the academic literature that prevent the deepening of the banks integration process, especially in the case of the new member states, are represented by the particularities of the local business environment, the cultural and linguistic barriers that exist which are enhanced by the different legal and fiscal systems which are in place in these countries and which tend to be very heterogeneous (Buch et Heinrich, 2002; ECB, 2011).

In order to underline the progresses made in the integration of the Romanian banking sector we will use the methodology set for the law of one price. Thus, according to the law of one price, as a result of the integration process the nominal interest rates should converge toward the most low registered level (for detail methodological considerations regarding the law of one price see the papers of Quiros și Mendizabal, 2001; Fernández de Guevara et al., 2003; Baele et al., 2004).

In order to completely underline this complex process we will also take a look at the changes that have been registered in the competition level from the analysed banking sectors, as a deepening of the integration process should point out to an increased competition level, as entry barriers are removed and the cost for accessing these new banking markets drops significantly.

In order to underline the annualized growth of the banking sectors we will use the *CAGR index* which is calculated based on the formula:

$$CAGR(t_0, t_n) = \left(\frac{V_{(t_n)}}{V_{(t_0)}} \right)^{\frac{1}{t_n - t_0}} - 1$$

where V_{t_0} represents the starting value and V_{t_n} is the last value, $t_n - t_0$ represents the number of years. The *CAGR Index* deepens the effect of volatility of periodic variations that can render arithmetic means irrelevant.

In order to establish the dynamics of the competition on the banking sectors from the new European Union member states we will take in to consideration two main indicators.

The first indicator that we will use is the *CR5 Index*, which represents the percentage that the top five banks are having in the total assets of the system and which reflect the concentration degree of the market. The indicator is calculated based on the formula:

$$CR5 = \frac{A_1 + A_2 + A_3 + A_4 + A_5}{AT} \times 100$$

where A_1, A_2, A_3, A_4 and A_5 represent the value of the assets held by the top five banks in the system and A_T represent the value of the total assets of the banking system. It can take values between 0.1% and 100%, where the low value represents a highly dispersed market and 100% represents an oligopoly or monopoly.

The second index that we will use is the *Herfindahl Index*, which underlines the degree of competition which exists on the market and is calculated based on the following formula:

$$H = \sum_{i=1}^N s_i^2$$

where s_i is the market share (in our case the value of banking actives) of firm (bank) i and N represents the number of banks that exist in a certain market. It can take values between 0 and 10000. If the values are below 100 it underlines the existence of a highly competitive market, if the value is below 1000 it reflects a dispersed market, if the value is between 1000 and 1800 it indicates a relative moderate concentration in the market and if the value is above 1800 indicates a highly dense market.

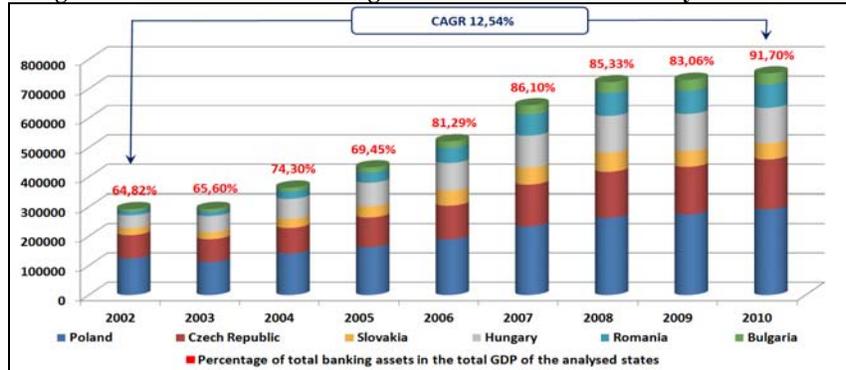
4. Development of the banking sectors from the new EU member states

In the context of the global financial and economic crisis we can say that the banking systems from the new member states are at a cross-road. The impact of the crisis on these banking systems, coupled with the economic depression that followed has led to a depreciation of the banks portfolio which are active in these markets. Despite the low percentage of bad credits, the high rate of late payments related to the existent loans has raised the pressure on the bank's ability to obtain profits, mainly because of provisions that they must constitute taking in to consideration the current developments. In this context the main focus of the banking activity in the analysed states has been

shifted since the start of the economic down turn from the expansion of the credit activities, which characterised the period prior to the summer of 2008, to a strategy concerned with the management of the existing loans portfolio. Alongside all these developments, there is a constant pressure on the banks from the analysed markets to diminish their costs which has pushed many of them to re-evaluate their operational network capacities, their cost structure, their credit portfolios and also their medium term business plans.

The total assets of the banking sectors from the analysed countries were at the end of 2010 at 752,93 billion euro, registering a rise from the previous year with 2,99%.

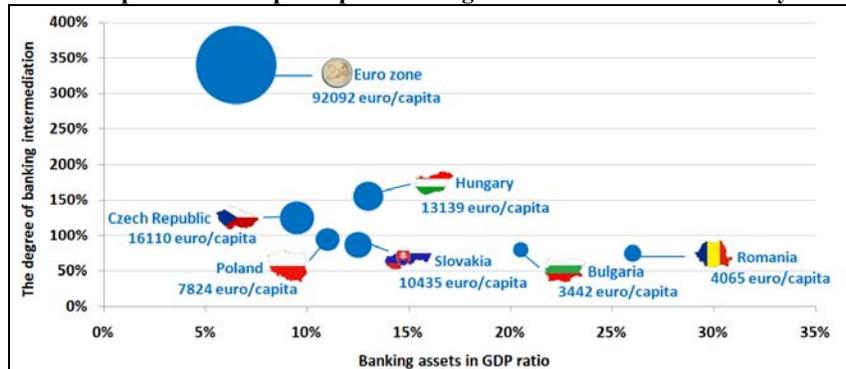
Figure 1: Growth of the banking assets in the case of the analysed countries



Source: Own simulation based on data provided by the European Central Bank.

If we analyse the per capita ratio, then at the end of 2010, we can see that the values are much dispersed, with Bulgaria registering the lowest value and the Czech Republic the highest.

Figure 2: The dispersion of the per capita banking assets in the case of the analysed countries

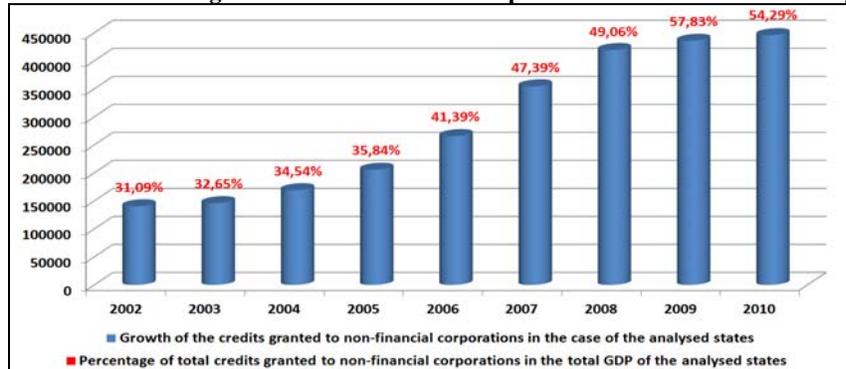


Source: Own simulation based on data provided by the European Central Bank.

In regard to the evolution of the bank’s credit activity, this has registered a period of strong development between 2002 and 2008, especially as a result of the aggressive promotion of the consumer credits in most of the analysed countries. This period of boom was followed by a freeze in the loaning activity in 2009 and 2010 as a result of the financial crisis and economic depression which has hit most of the new European Union member states. Moreover the projections made by the European Central Bank suggest an average contraction of the lending activities of the banks from the panel countries with about 6% in 2010, as a result of the depreciation of the economical and financial environment of these countries.

Taking into account these developments we can argue that the banking sectors from the analysed countries have registered a strong development in the last period, which can be partially attributed to the European integration process. Nevertheless we consider important to underline the fact that the banking sectors from these countries are far from reaching their full potential for development, especially taking into account that these sector can benefit from the latest technological advancement in this field and thus having the possibility to compress development stages through which they need to go.

Figure 3: Growth of the credits granted to non-financial corporations in the case of the analysed countries

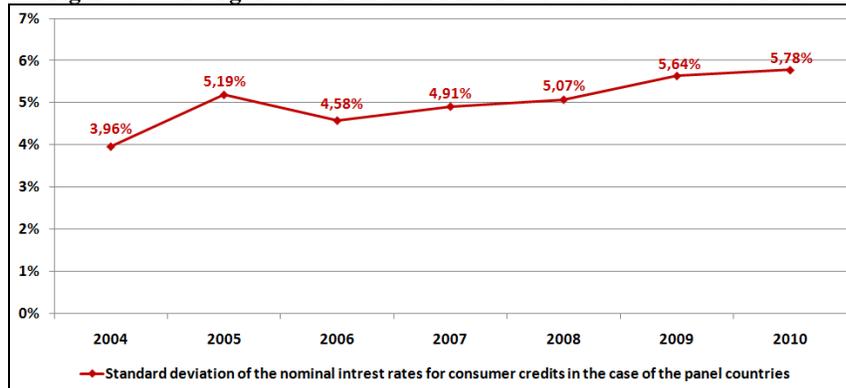


Source: Own simulation based on data provided by the European Central Bank.

5. Achievements and challenges in the integration process

We will start our analysis by comparing the convergence of the nominal and the real interest rates for retail credits, more exactly general purpose credits. We have taken in to consideration these interest rates because the general purpose credits represent one of the main categories of credits granted by the banks operating in the analysed countries.

Figure 4: Convergence of the nominal interest rates for consumer credits

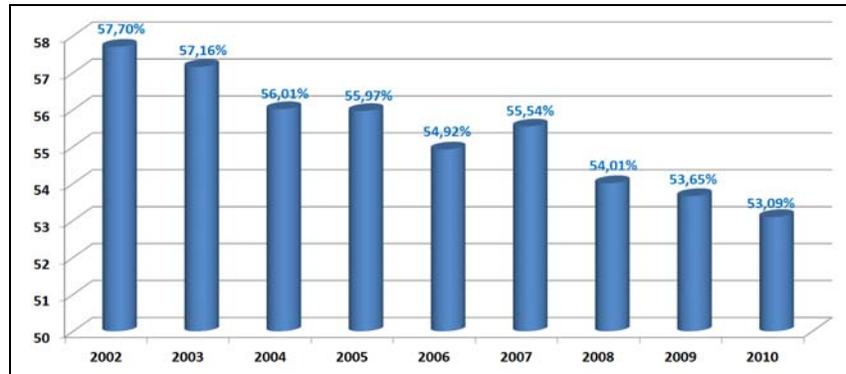


Source: Own simulation based on data provided by the European Central Bank.

Despite of the negative impact of the financial crisis we can observe from the analysis of the convergence of the nominal interest rates a deepening of the integration process of the banking sectors from our panel, which tends to confirm the *law of one price* – at least until 2006.

In this context it becomes interesting to analyze the evolution of the competition level that exists in these banking markets.

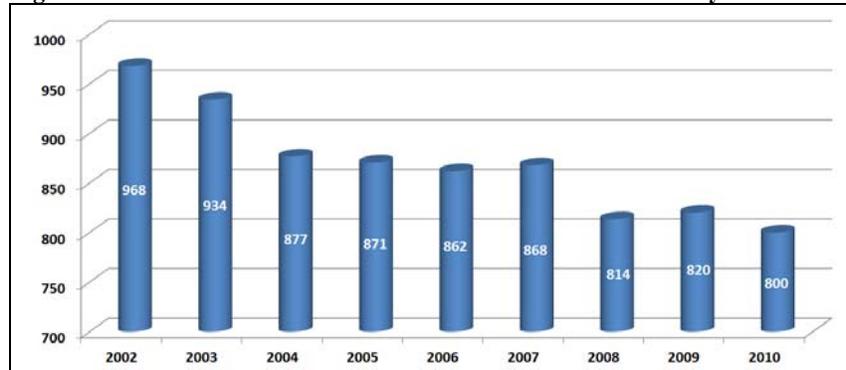
Figure 5: Evolution of the concentration index (CR-5) in the case of the analysed countries



Source: Own simulation based on data provided by the European Central Bank.

From our analysis we can see that the analysed banking sectors have registered a consolidation of the activity, as a result of the diminishing of the competition level. Most of the bigger banks present in these markets have undertaken several aggressive campaigns which have solidified their presence making it more difficult for smaller competitor to develop lucrative niches. We can also observe that as a backlash of the financial crises and of the economic depression that has hit these new member states since the mid of 2008, the share of the top 5 banks has dropped, but the Herfindahl index has registered approximately the same values.

Figure 6: Evolution of the Herfindahl index in the case of the analysed countries



Source: Own simulation based on data provided by the European Central Bank.

This indicates a relative stability regarding the competition level on the market, while the banking assets have been spread around more. This is an effect of the rationalisation of credit by the bigger banks, which have diminished their share of the market in relationship with the consolidation of the smaller competitors which have tried to freeze and solidify their assets.

6. Concluding remarks

Correlating the results of the two analysis undertaken we can conclude that the integration process of the banking sectors from the analysed countries is a present process which fell short of expectations. However, we must underline the fact that the deepening of banking integration process in the case of these banking sectors, and at the European Union level in general depends now much more on the decisions of the market players and also to some collateral factors and to a lesser degree to issues which can be regulated and harmonised away by pan-European legislation initiatives. This is the reason why we consider that the integration and development of these banking sectors is a process still underway, far from being complete, which has just entered in the fundamental changes phase, which will take some time to be achieved but surely will provide greater benefits.

7. References

- Adam, K. Jappelli, T. Menichini, A. Padula, M. & Pagano, M. (2002). *Analyse, compare, and apply alternative indicators and monitoring methodologies to measure the evolution of capital*

market integration in the European Union. Working Paper Series. Fisciano: Centre for Studies in Economics and Finance, University of Salerno.

- Affinito, M. & Farabullini, F. (2006) An empirical analysis of national differences in the retail bank interest rates of the euro area, *Bank of Italy temi didiscussione* 589.
- Baele, L.M., Ferrando, A., Hordahl, P., Krylova, E. and Monnet, C. (2004), “Measuring financial integration in the euro area”, *European Central Bank Occasional Paper*, no. 14.
- Buch, C.M. and Heinrich, R.P. (2002), “Financial Integration in Europe and Banking Sector Performance”, *Kiel Institute of World Economics Report*.
- Dieckmann, R. (2006), “EU retail banking - Drivers for the emergence of cross-border business”, *EU Monitor, Deutch Bank Research*, no. 34.
- European Central Bank (2011), “Financial Integration Report 2011”, *Annual Report Series, Frankfurt am Main*.
- Gual, J. (2004), “The integration of EU banking markets”, *Centre for Economic Policy Research Discussion Paper Series*, no. 4212, Londra.
- Köhler, M, (2007) M&A control as barrier to EU Banking market integration, *Zentrum für Europäische Wirtschaftsforschung Discussion Paper*, No. 07-082.
- Köhler, M, (2009) Transparency of Regulation and Cross-Border Bank Mergers. *Zentrum für Europäische Wirtschaftsforschung Discussion Paper*, No. 08-009.
- Lensink, R. and Hermes, N. (2004), “The short term effects of foreign bank entry on domestic bank behaviour: does economic development matter”, *Journal of Banking and Finance*, no. 28, p. 553–568.
- Manna, M. (2004), “Developing Statistical Indicators of the Integration of the Euro Area Banking System”, *European Central Bank Working Paper Series*, no. 300.
- Pérez, D., Salas-Fumás, V. & SAURINA, J. (2005) Banking integration in Europe, *Banco de Espana documentos de trabajo*, No. 0519.
- Rajan, R.G. and Zingales, L. (2003), “Banks and markets: The changing character of European finance”, in: Gaspar, V., Hartmann, P., Sleijpen, O., (Eds.), *Proceedings of the 2nd ECB Central Banking Conference on the Transformation of the European Financial System*, European Central Bank, Frankfurt.
- Staikouras, P., Staikouras, C. and Agoraki, M.E. (2007), “The effect of board size and composition on European bank performance”, *European Journal of Law and Economics*, no. 23, p. 1-27.

BUDGET REVENUES IN EU-27

INCEU Adrian Mihai

Ph. D. Associate professor, Department of Finances, Faculty of Economics, Babeş-Bolyai University, Cluj-Napoca, Romania, inceudrian@yahoo.com

ZAI Paul

Teaching assistant, Department of Public Administration, Faculty of Political, Administrative and Communication Sciences, Babeş-Bolyai University, Cluj-Napoca, Romania, zaypaul@yahoo.com

Abstract: *In this paper we make a brief and comprehensive analysis of budget revenues for all the countries of E.U.27. Our main goal was to study the main trends in budget revenues for the countries of European Union. This analysis is also important to emphasize the effects of economic crisis to budget revenues.*

Key words: public budget, revenues, taxes, trends

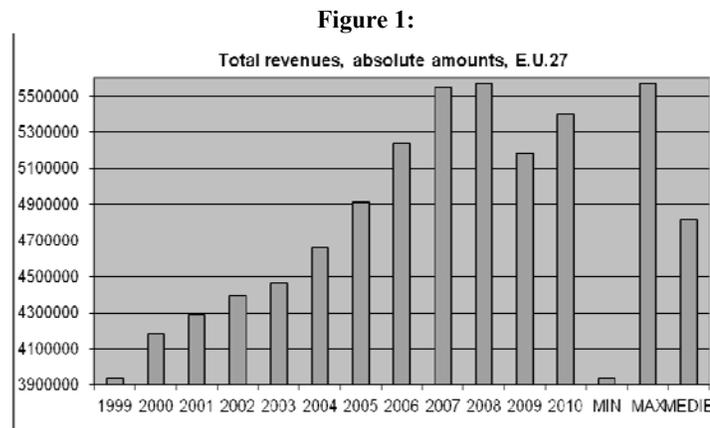
JEL classification: E62, H60

1. Introduction

In the analysis of the budget revenues for E.U. 27, we shall start to explore the income in the period 1999-2010 (graphic no.1), and then we shall perform an analysis of the E.U. budget revenue structure, components, dynamics, and the main causes that led to the development.

2. Total revenues.

We can see that the total revenues from the E.U. 27 level increased from 3,933,492 million Euros in 1999 to 5,570,635 million Euros in 2008, when they peaked, followed later by reductions for 2009 and 2010.



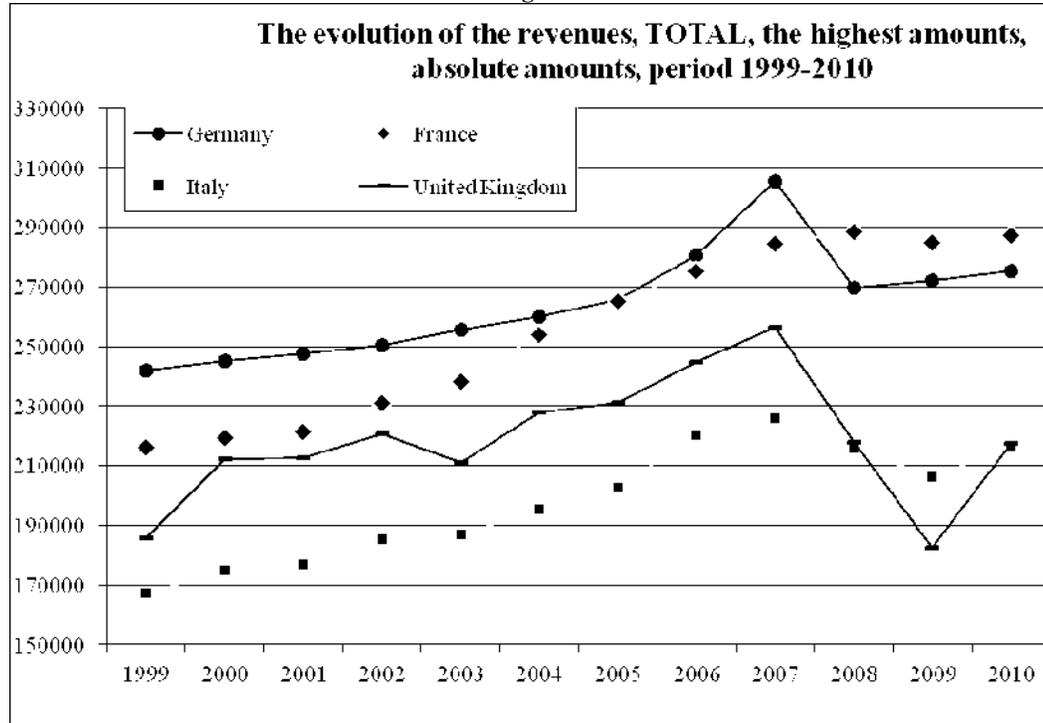
Source: personal processing of the data extracted from the Eurostat

Following the available data, we could observe an increase in the total revenues in most E.U. 27 countries. The exception is Poland where we have found that the total revenues have fluctuated in the period analyzed, increasing from 1999 to 2002, from 63,628 million Euros, decreased to 73,552.4 million Euros in 2003 and increased to 143,497 million Euros in 2008. In 2009 and 2010, the amounts deducted, with the values of 115,356.1 million Euros, respectively 132,948.2 million Euros. The same is true for Romania where saw increasing trends between 1999-2000 from 16,040.9 million to 17,673.7 million Euros, falling back to 16,490.3 million in 2001, increasing again in 2002 to 18,197.4 million Euros and then decreased to 16,872.3 in 2003 and will increase to 46.966 million Euros in 2008, followed in 2009 and 2010, by a decreasing trend to the value of 37,939.2 million, respectively 41.405.8 million Euros.

Based on the data available regarding Romania, we can observe that its revenues, in total amounts, started to grow in absolute amounts from 16,040.9 million Euros in 1999 to 46,966.4 million

Euros in 2008, scoring in this year an increase of 2.93 times compared to 1999. The only decreases in the levels of the total revenues in Romania were recorded in 2001 compared to 2000, from 17.673 million to 16.490 million Euro, and in 2003 compared to 2002, from 18.197 million to 16.872 million Euros.

Figure 2:



Source: Personal processing of the data extracted from the Eurostat

The most significant increase of 1.30 times was registered in 2005 over 2004, and in 2007 over 2006, with same value. If we make a comparison with Bulgaria, who joined in the same year as Romania, to the European Union, we noted that the maximum total revenue recorded in Romania is 3.5 times higher than the maximum registered in Bulgaria in 2007. On the other hand, mention that the maximum recorded in Romania is about 0.6% of the maximum of the E.U. 27.

Table 1: The maximum percentages out of the total revenues, at: total tax, social contributions and other revenues or incomes:

Total tax:	85,90% (2005)	Denmark
Social contribution:	41,40% (2004)	Germany
Other incomes:	18,43% (1999)	Estonia

Source: Personal processing of the data extracted from the Eurostat

The averages of the total incomes that are really close to the value of 20,000 million Euros, were scored in Hungary with an average of 30,000 million Euros, 35,000 million Euros in Czech Republic and Luxembourg, Slovakia and Slovenia with 10,000 million Euros. In the structure of Romania's budgetary revenues, the largest share in the revenues they had social security contributions and V.A.T., this situation is very similar to the European Union. The minimum values of the total revenues in 1999, were identified in the following countries: Malta (1,293 million Euros), Estonia (1,965 million Euros), Latvia (2,585 million Euros), Cyprus (2,975 million Euros). These countries recorded the lowest values of total income as they have recently joined the European Union (in 2004) and have few inhabitants and a relatively small geographical area. For this reason they have remained low, if we talk about total revenues compared to other older members, even founders, who had the possibility of economic development since joining the European Union.

Table 2: The minimum percentages out of the total revenues, at: total tax, social contributions and other incomes

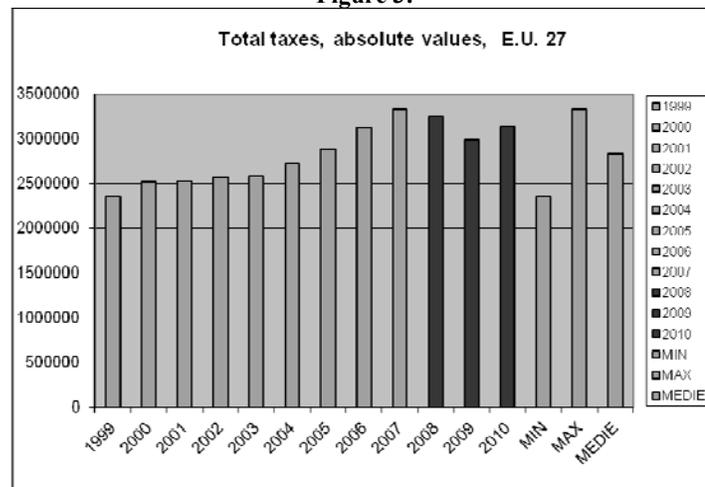
Total tax:	32,69%(1999)	Estonia
Social contributions:	3,30% (2008)	Denmark
Other incomes:	5,21% (2003)	Belgium

Source: Personal processing of the data extracted from the Eurostat

Denmark has the highest share of total revenues (85.90%) in 2005, and the minimum share of social contributions in total revenues is found again in the same country (3.37%) in 2007. Maximum and minimum share of other income in total income is insignificant.

The average percentage of the total taxes out of the total of the budgetary revenues at the E.U. 27 level is of 58.57%, the social contributions of 31.15% and 11.69% regarding other incomes. In Belgium, Germany, France, Luxembourg, England, the total tax share is over 50% out of the total revenues of these countries, and the social contributions are more than 25-30% out of the total revenues, while in the rest of the other countries, the percentages of these two components in their total budgetary revenues is above 15-20%. A two fold increase over total revenue in 2007, 2008, 2009 and 2010 compared to 1999 is observed in Estonia, Cyprus, Latvia, Lithuania, Romania, Slovakia and CzechRepublic. The average share of total income E.U. 27 is over 45% of P.I.B. The highest average total income in the E.U. 27 member countries, from 1999 to 2007 appears in the following countries: Germany with 1,000,421 million Euros, France with 842,597 million Euros, 698,093 million Euros in England, Italy with 630.592 million Euros, and Spain with 330,231 million Euros. Out of the total average income in the E.U. 27, these five countries have about 75% of total revenue (about 4,000,000 million). It is not surprisingly, the fact that these five countries are those that have the greatest number of people among the member states of the Union. The total population at the E.U. level is of 492.881.583 inhabitants. Only in Germany, France, England, Italy and Spain there are an estimated 311,005,022 people, with other words 63% of the entire E.U. 27 population.

Figure 3:



Source: Personal processing of the date extracted from the Eurostat

Table 3: Average total taxes, social contributions, other incomes in E.U.

Total taxes:	58,57%
Social contributions:	31,35%
Other incomes	0,18%

Source: Personal processing of the data extracted from the Eurostat

The lowest values of the average total incomes in the period that is the subject of our study were in Malta (1.293 million Euros), Estonia (1.966 million Euros), Latvia (2,586 million Euros), Cyprus (2.975 million Euros), and Lithuania (3,819 million Euros). In terms of population, these countries are on the last places in the E.U. 27, also because of low values mentioned before.

Table no. 3 shows the main components of the total income averages in the period. Making a comparison between the first five E.U. countries in what concerns the number of people and last five countries, we can see the differences between these states, however as economic forecasts, small countries have high growth potential despite their size.

After analyzing the above indicators can draw several conclusions: The oldest E.U. member states have reached a point of maturity in terms of revenues and economic development compared to new members; The relatively new E.U. member states enjoy the benefits of membership transient. There are founded new companies and new jobs in the labor market; The new members benefit from the European Funds, which ultimately drive to an economic growth; The highest share in total revenues is taken by the total taxes, followed by the social contributions and other incomes.

The global average tax pressure exerted in the EU27 in the period is about 45-46%. The highest overall average tax pressure were recorded in the Nordic countries with values close to 50%, and the lowest one, in Romania, Lithuania, Latvia with values close to 30%. It is remarkable that out of all the former communist countries, which are now E.U members, Romania is the country with the lowest tax burden, which is determined by the new tax rate measures on the individual's income, the profit tax rate by reducing the tax base. At the calculation of the average tax pressure, take part in approximately equal shares the social contributions, direct taxes, indirect taxes, and the most insignificant proportion represented by other incomes. The low tax burden (European Commission, 2007:6-9) occurs in developing countries, in an attempt to stimulate economic development and attract investment, increase employment and labor productivity.

On the other hand in developed countries meets a high tax, because they need tax incentives to encourage investment.

3. Total taxes

The total taxes are divided into direct taxes and indirect taxes, each of these two components are subdivided into several subcategories. Based on the image we get from graphic no.3, the total taxes in E.U. 27 have an ascending tendency (the lowest value being recorded in 1999 with 2,351,973 million Euros and a maximum value recorded in 2007, with 3,347,053.1 million Euros). We can see a slight decrease in the years: 2008, 2009 and 2010, compared with the levels achieved in 2007.

Table 4: Total taxes, state ranking, mil. Euros

Maximal values		Minimal values	
England	600.981 (2007)	Malta	775 (1999)
Germany	580.500 (2007)	Estonia	758.7 (2000)
France	520.040 (2008)	Latvia	1455 (1999)
Italy	459.888 (2007)	Cyprus	1956 (1999)
Spain	263.373 (2007)	Lithuania	2344 (1999)

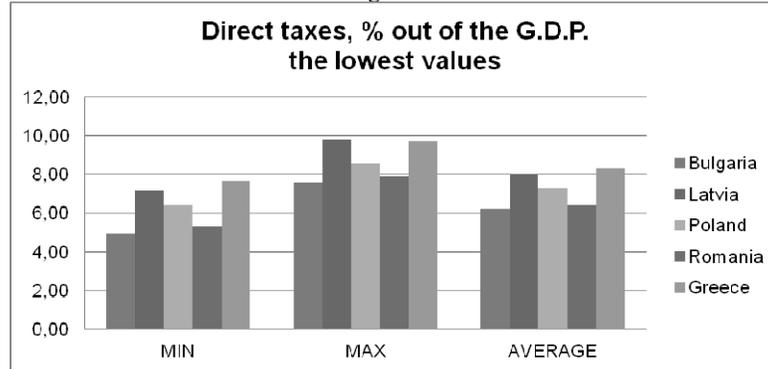
Source: Personal processing of the data extracted from the Eurostat

In the category of maximum values of the total revenues, appear old E.U. member states and in the category of minimum values are highlighted the countries that recently joined the European Union. In the period 2001-2008 the revenues from the total taxes grow. For Romania, the maximum values of the revenues out of the total taxes, is 25,767.8 million Euros, recorded in 2008, and the minimum value is 6743.7 million Euros in 1999.

4. Direct taxes

During the analyzed period, until 2008 we can see a steady increase in direct taxes, without sudden fluctuations of their values, followed in 2009 by values that decline and in 2010 they increased slightly.

Figure 4:



Source: Personal processing of the data from the Eurostat

The direct taxes at the Union level had an ascendant evolution between 1999 and 2010 increasing from 1,178,209.5 million Euros in 1999 to 1,663,036 million Euros in 2008. Calculating the basic chain indices of the direct tax revenues in the E.U. 27, we can see that these values were below 1 in 2001, 2002, 2003 and 2009 and in 2004, 2005, 2007, 2008, 2010 and 1999 values a little over 1. The average of the percentage or the share of the direct taxes out of the total revenues is 29.01% in the period, while the average share of total taxes in the G.D.P. is over 12%.

This high value of the direct tax revenue is a part of the very idea of rebalancing a growing budget deficit, which in 2007 reached a value of 3% of GDP, 0.2% higher than the previous year. (See graphic no.4).

The average of the revenues out of the direct taxes at the E.U. level is 1,399,241 million Euros for the analyzed period, and at the member states level, we have a minimum average value in Malta, with 586 million Euros while the average maximum is registered in England 286,928 million Euros. It was expected that the countries with the lowest and highest mean of direct taxes are the same countries which had the maximum, respectively the minimum, of these taxes.

Please note that during 1999-2010, the direct tax revenues in absolute amounts in Romania increased from 2629.2 million in 1999 to 9388.3 million Euros in 2008. We also want to mention that Romania scored its highest income value recorded from direct taxes of 9,388.3 million Euros in 2008, and the minimum value was 2629.2 million Euros in 1999. The average share of the revenues from direct taxes in Romania, in the average of the total incomes was 18,07% for the whole period, while the average percentage of the revenues from the total tax is 29,01%. However, considering the average share of total tax revenue from Romania in the E.U. 27 average total income for the entire period, we find out that it is only 3.8%.

5. Indirect taxes

The maximum amount of the indirect tax revenue in the E.U. 27 was 1,666,408.9 million Euros in 2007. The minimal amount of the budget revenues (from this tax) in the E.U. 27 was recorded in 1999 and was 1,174,391 million. Regarding the average, we can say that it was 1,426,687.82 million Euros in the period under review for E.U. 27.

The country that recorded the maximum values of the indirect taxes was Germany, which recorded a maximum of 305.460.00 million Euros in 2007. The main reason for this maximum was recorded in indirect taxes, in Germany, was due to the increasing of the V.A.T. rate from 16% to 19%.

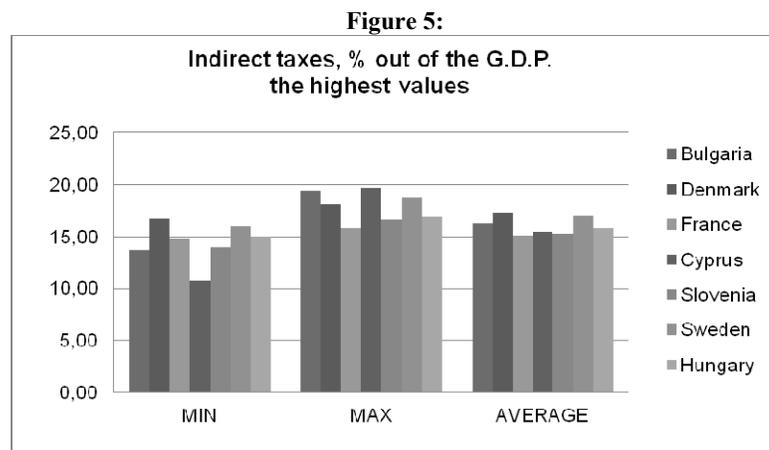
All the maximum values are recorded in 2007, except France (2008) by the old European Union member countries, while minimum values are found in countries that joined recently the European Union. France also has quite high values of the maximum indirect tax revenue in quantum of 288.571 million Euros in 2008. The main cause of this increase was the lowering of the indirect tax rates leading to a high degree of their collection. Britain also reached high values of the indirect tax revenue in this period, namely a maximum of 256,470.5 million Euros in 2007. The main cause of this increase was due to a higher rate of the indirect taxes from 37.6% to 38.3%.

If in the Nordic countries, the highest indirect tax revenues were recorded, we see that the indirect taxes are exactly the opposite, Finland registering, for example, the minimum of the percentages in total

incomes of the indirect taxes. We noted that the maximum percentages of the indirect tax revenue in total income were in Bulgaria. High percentages appear in former communist countries such as Romania, Hungary, Poland, Slovakia and other countries such as Slovenia, Latvia, Ireland, Portugal, and Lithuania.

Further, considering the percentage of the G.D.P. of the indirect taxes for all countries analyzed, we find that it varies between 8.80% - 19.70% for the entire period (1999-2007). The maximum percentage in the G.D.P. of indirect taxes was recorded in Bulgaria (19.4% in 2006), and the minimum in Spain (8.8% in 2009) (see chart no. 5). We noted that in Germany, Spain, Italy, Netherlands, England, the maximum percentage in G.D.P. of these taxes had minimum values and the average of the period analyzed had a very close level to the minimum, which suggests that the indirect taxes have been a slow evolution for the entire period considered in this study.

The indirect taxes are divided into taxes on production and other taxes on production. The revenues from the taxes on production represent over 80% of the revenues from taxes on production and imports, with an average share of the total income of 24.70% and an average share in G.D.P. of 10.96% (of the U.E. 27). These revenues, in the U.E. 27 had a maximum value of 1,380,088.2 million Euros in 2007 and a minimum value of 966,185.6 million Euros in 1999.



Source: Personal processing of the data from the Eurostat

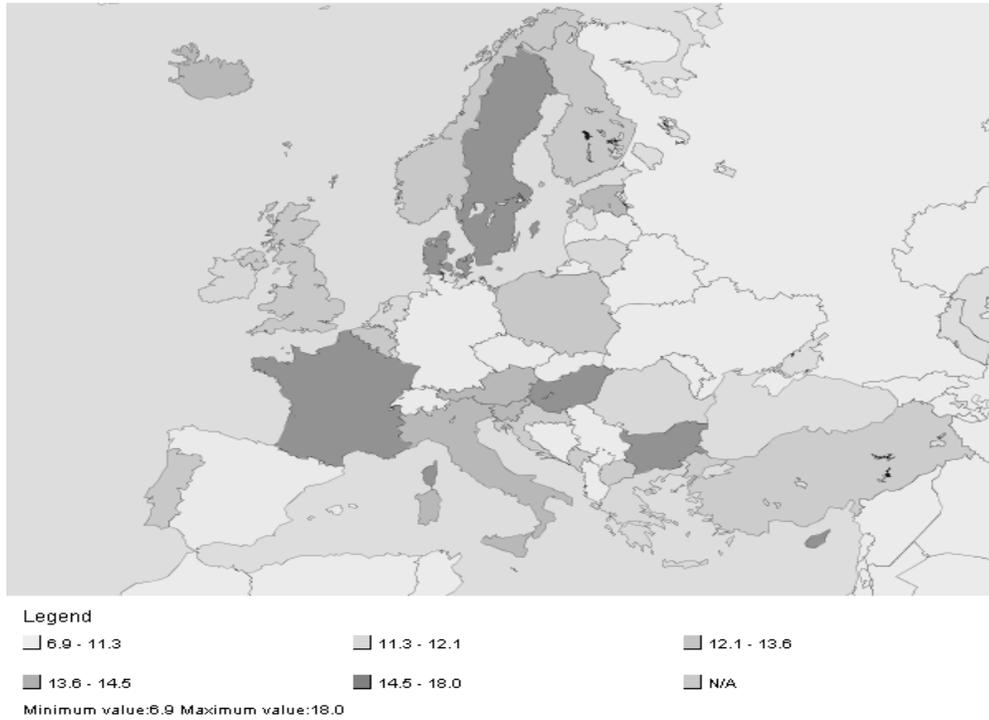
Among the countries that have high levels of incomes from taxes on production, are to be named: Germany, England, France and Italy. This is due to an improvement in services, namely the production of the goods in those countries, so that the amount of revenues from taxes on products increased proportionally with them.

The taxes on production are divided into: a) value added tax (V.A.T.), b) Taxes on imports excluding V.A.T., c) taxes on production, excluding VAT and customs duties.

The V.A.T. is the most important component of the taxes on production and it represents about half of the taxes on production and imports, accounting for 15.18% of the total revenues, and accounted for 6.73% of E.U. 27 G.D.P. The revenues of the value added tax in the E.U. 27 recorded a maximum of 856,510.1 million in 2007, and the minimum value, 568,410 million, was recorded in 1999. If we analyze the evolution of the income from V.A.T., we can see that these revenues are evolving in the analyzed period from 568,410 million in 1999 to 856,510.1 million in 2007, and then, in 2008, 2009 and 2010, the values registered were below the peak recorded in 2007. The countries with the highest values of V.A.T. revenues are: Germany (178,460 million Euros in 2010), France (134.744 million Euros in 2008), England (131,047.4 million Euros in 2007) and Italy (131,047.4 million Euros in 2007). The lowest values of the V.A.T. revenues in the countries of the E.U.27, appear in Malta, Latvia, Cyprus, Estonia.

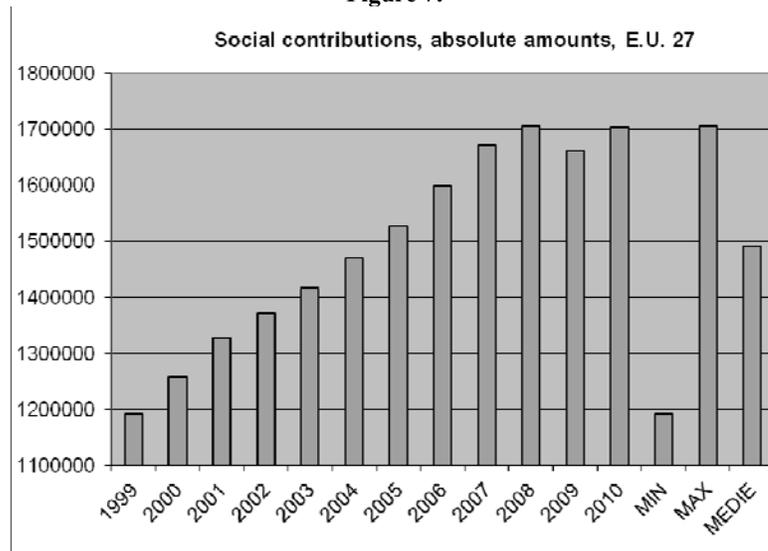
Figure 6:

Taxes on production and imports
% of GDP - 2010
General government



Romania ranks seventh E.U. 27, in terms of total share's average of the V.A.T. revenue in total revenues at a rate of 19.92%. Bulgaria is just ahead of Romania with a share of total V.A.T. revenues of 27.25%, 23.09% Estonia with 23.09%, Ireland 19.99%, 20.61% Cyprus, Latvia 20.96% and Lithuania with 21.73%. Analyzing the share in the G.D.P. of the V.A.T., on all the countries surveyed, we acknowledged that it ranged between 4.8% and 12.4% for the entire analyzed period.

Figure 7:



Source: Personal processing of the data from the Eurostat

6. Social Contributions

Throughout the period under review at the EU 27 level, more precisely, between 1999 and 2010, the revenues from the social contributions have gradually increased from the amount of 1,191,904.9 million to 1,587,632.2 million Euros (in 2008), as can be seen in chart 6. The minimum and the maximum values were reached at the beginning and the end (as shown before: 1999 and 2010).

Analyzing all the E.U. 27 member states, the higher amount of revenues from the social contributions can be seen in Germany - 418,680 million Euros in 2010, this is due to the social benefits reform that was implemented in 2005, which involved a certain period of adjustment. The other countries have recorded the following data: Italy with 215.809 million Euros in 2008, England, with 169.787 million Euros in 2007 and France with 360,450 million Euros in 2010.

The value of the social contributions so high in Germany is due to the public health insurance whose rates have increased, the employment growth, but also because of the increased detectable amounts paid to unemployed and to the self-employed. The total value of the social contributions can be obtained by adding the current value of the social contributions, in percentage of 92% and the value of the social contributions provided, in percentage of 8%. At their turn, the actual social contributions consist of employers' current contributions with 42%, employees' social contributions with 39% and the social contributions of the unemployed and self-employed with 19%. The minimum amount of the income from social contributions is recorded in Malta, with 274 million in 1999.

It should be noted that the value of the social contributions in Malta is so low because the public sector had to give up a large number of state enterprises, a situation that has led to a considerable decrease of jobs, reduce a turnover value that implicitly reduced the social contributions. The revenues from the social contributions in Malta, in 2010 reached the highest value of 465.3 million Euros, of which 79.66% were actual social contributions, accounting to 370.7 million Euros and 20.34%, social contributions provided. The actual social contributions are divided in current employers' social contributions, accounting to 167.8 million Euros, representing 45%, actual social contributions of employees amounting to 167.3 million Euros, representing 44% and contributions of the unemployed and self-employed in the amount of 36.7 million Euros, representing 10%. The social security value is also analyzed in the following countries: Cyprus - Euro 607.4 million in 1999, Estonia - 595 million Euros in 1999 and Latvia - 744 million Euros in 1999.

Referring to Romania, it reached the maximum level of the social contributions in 2008 with 14,117.3 million and the minimum, 3836.8 million in 1999. The minimum and the maximum are all met at the beginning (1999) and the end (2010). The average values of the social contributions in the E.U.27 are 1,491,524 million and the average found in among the member states is 59.912 million Euros. Not the same can be said about Germany, which has an average of 396.194 million Euros, followed by a difference of over 85,000 million Euros by France, with 307,230 million and then by Italy with 180,665 million, England with 138,991 million Euros. The minimum values of the average social security contributions during the review were found in Malta - 376 million Euros, Cyprus 1,031 million, Estonia 1,225 million and Latvia 1.246 million. In Romania the average social security contributions for the period 1999-2010 is 8.286 million Euros.

7. Conclusions

The total revenues from the E.U. 27 level increased from 3,933,492 million Euros in 1999 to 5,570,635 million Euros in 2008, when they peaked, followed later by reductions for 2009 and 2010. We could observe an increase in the total revenues in most E.U. 27 countries.

The minimum values of the total revenues in 1999 were identified in the following countries: Malta (1,293 million Euros), Estonia (1,965 million Euros), Latvia (2,585 million Euros), Cyprus (2,975 million Euros).

Denmark has the highest share of total revenues (85.90%) in 2005, and the minimum share of social contributions in total revenues is found again in the same country (3.37%) in 2007.

The average percentage of the total taxes out of the total of the budgetary revenues at the E.U. 27 level is of 58.57%, the social contributions of 31.15% and 11.69% regarding other incomes.

In Belgium, Germany, France, Luxembourg, England, the total tax share is over 50% out of the total revenues of these countries, and the social contributions are more than 25-30% out of the total

revenues, while in the rest of the other countries, the percentages of these two components in their total budgetary revenues is above 15-20%.

The oldest E.U. member states have reached a point of maturity in terms of revenues and economic development compared to new members;

The highest share in total revenues is taken by the total taxes, followed by the social contributions and other incomes.

The global fiscal pressure in the EU27 in the period is about 45-46%. The highest overall average tax pressure were recorded in the Nordic countries with values close to 50%, and the lowest one, in Romania, Lithuania, Latvia with values close to 30%.

In the category of maximum values of the total revenues, appear old E.U. member states and in the category of minimum values are highlighted the countries that recently joined the European Union. In the period 2001-2008 the revenues from the total taxes grow. For Romania, the maximum values of the revenues out of the total taxes, is 25,767.8 million Euros, recorded in 2008, and the minimum value is 6743.7 million Euros in 1999.

The direct taxes at the Union level had an ascendant evolution between 1999 and 2010 increasing from 1,178,209.5 million Euros in 1999 to 1,663,036 million Euros in 2008.

The average of the percentage or the share of the direct taxes out of the total revenues is 29.01% in the period, while the average share of total taxes in the G.D.P. is over 12%.

The maximum amount of the indirect tax revenue in the E.U. 27 was 1,666,408.9 million Euros in 2007. The minimal amount of the budget revenues (from this tax) in the E.U. 27 was recorded in 1999 and was 1,174,391 million. Regarding the average, we can say that it was 1,426,687.82 million Euros in the period under review for E.U. 27.

The country that recorded the maximum values of the indirect taxes was Germany, which recorded a maximum of 305.460.00 million Euros in 2007. The main reason for this maximum was recorded in indirect taxes, in Germany, was due to the increasing of the V.A.T. rate from 16% to 19%.

All the maximum values for indirect taxes are recorded in 2007, except France (2008) by the old European Union member countries, while minimum values are found in countries that joined recently the European Union.

If in the Nordic countries, the highest indirect tax revenues were recorded, we see that the indirect taxes are exactly the opposite, Finland registering, for example, the minimum of the percentages in total incomes of the indirect taxes. We noted that the maximum percentages of the indirect tax revenue in total income were in Bulgaria.

Further, considering the percentage of the G.D.P. of the indirect taxes for all countries analyzed, we find that it varies between 8.80% - 19.70% for the entire period (1999-2007). The maximum percentage in the G.D.P. of indirect taxes was recorded in Bulgaria (19.4% in 2006), and the minimum in Spain (8.8% in 2009)

The indirect taxes are divided into taxes on production and other taxes on production. The revenues from the taxes on production represent over 80% of the revenues from taxes on production and imports, with an average share of the total income of 24.70% and an average share in G.D.P. of 10.96% (of the U.E. 27).

The V.A.T. is the most important component of the taxes on production and it represents about half of the taxes on production and imports, accounting for 15.18% of the total revenues, and accounted for 6.73% of E.U. 27 G.D.P.

The revenues from the social contributions have gradually increased from the amount of 1,191,904.9 million to 1,587,632.2 million Euros (in 2008). The minimum and the maximum values were reached at the beginning and the end (as shown before: 1999 and 2010).

Analyzing all the E.U. 27 member states, the higher amount of revenues from the social contributions can be seen in Germany - 418,680 million Euros in 2010, this is due to the social benefits reform that was implemented in 2005, which involved a certain period of adjustment. The other countries have recorded the following data: Italy with 215.809 million Euros in 2008, England, with 169.787 million Euros in 2007 and France with 360,450 million Euros in 2010.

8. References

- Structures of the taxation systems in the European Union, <http://epp.eurostat.cec.eu.int>,

- Manual on compilation of taxes and social payments on a quarterly basis- First edition, <http://europa.eu.int>,
- <http://epp.eurostat.cec.eu.int>
- <http://forum.europa.eu.int/irc/dsis/nfaccount/info/data/esa95/en/esa95en.htm>

IMPORTANCE OF THE MEASUREMENT OF THE LIQUIDITY RISK IN BANKING MANAGEMENT

ION Luminița

Ph. D. Student, Faculty of Management, Academy of Economic Studies, Bucharest, Romania, iluminita71@yahoo.com

ION Alexandra

Ph. D. Student, Faculty of Marketing, Academy of Economic Studies, Bucharest, Romania, alexandra_ion007@yahoo.com

Abstract: *In context of increased exposure of banks to the liquidity risk, bank management must monitor over the vulnerabilities which arising and use appropriate tools in this respect. The purpose of this paper is to present a technique used in banking, to reduce liquidity risk, respectively determining and monitoring indicators of the liquidity on the maturity bands. The result of this method is represented by the implementation inside the bank, of a strategy related to the liquidity management in crisis conditions. The paper provides a global image over the level of bank liquidity, and correct estimation of the expected cash flows.*

Key words: liquidity risk, system of indicators, strategy of bank, maturity bands.

JEL classification: G 21, G 32

1. Introduction

Efficient management of liquidity risk in each bank is an important condition for avoiding difficult situations for the treasury of the banking units and in order to avoid systemic risk. The literature mentions the role of banks in transformation and structural adequacy of savings, to the structure of needs for investment financing. (Stancu, 2004). Thus, liquidity management is one of the most important objectives that management of the bank must fulfill it. The bank must assess, on a regular basis, the variation of cash flows, for liquidity planning and for effectively manage the liquidity risk. Basically, a banking liquidity can be judged depending on the behavior of cash flows in different conditions, and liquidity risk management should take into account various scenarios related on expected cash flows (Jorion, 2000).

Liquidity management strategy must determine the sources, type and level of liquidity and keeping them within certain limits, to avoid a high level of concentration of resources. Banks must review annually strategies elaborated, to reflect better the changes which appears on the financial market, and with the purpose to settle that regulations were updated in correspondence with principle of banking caution.

Strategy related to the liquidity management, mainly includes the following elements: (Matz; Neu, 2007, p.71-75)

- specific business activity conducted and type of assets to be financed;
- customer base for which, the bank should gain the loyalty, by providing quality products;
- financing strategy, such as the diversification of funding sources, which is very important because it reduces the level of concentration and provides a balance between short-term resources, and for medium and long term resources;
- methods of measurement and reporting of liquidity in the bank;
- identification of liquid assets on the market.

Manifestation of liquidity risk has the following main reasons: is depending on the financial market and difficulty of correlation between the maturities of deposits and loans. The activity carried in a bank, involves the occurrence of problems due to the fact that liquidity demand is rarely equal to the supply of liquidity, by registering a liquidity surplus or liquidity deficit. Also, the greater existence of funds at bank disposal, to meet liquidity needs, means lower profitability for the bank. The policies that are adopted by a bank, should seek to avoid excessive concentrations of deposits, bearing in mind the changes in the market. Basically, banks can use a variety of indicators of liquidity, depending on internal needs and its own structure of assets and liabilities, for controlling and effectively manage liquidity risk. In order to estimate cash flow evolution, is used method of establishing and tracking indicators of liquidity on the maturity bands.

2. Stages of the liquidity risk management

Stages of the liquidity risk management are risk assessment and monitoring and limiting the risk of liquidity (Badea; Socol; Drăgoi; Driga, 2010).

Evaluation of bank liquidity is based on the following elements: analysis of composition of asset, analysis of volatility of liabilities, and analysis of items which are off balance-sheet, analysis of liquidity on most important currencies, use the derivatives tools for obtaining of liquidity expressed in the currency which covers the bank needs, for example, swap on currency.

Monitoring and limiting liquidity risk involves the use of following tools:

- management of bank assets and liabilities, designed to ensure proper structures of balance sheet by correlation between investments and resources, both in terms of maturity and structure;
- determining and monitoring liquidity indicators on the maturity bands, based on future analysis of cash flow;
- determining minimum limits for indicator of liquidity, for the first maturity bands;
- implementation of GAP analysis (Management for Total Assets and Liabilities separately, in Ron and foreign currency), and monitoring the indicators of GAP;
- establishing by indicative limits for deposits in Ron and foreign currency;
- monthly calculation of liquidity indicators;
- monitoring the high liquidity risk existing to a single borrower.

Conditions in which are established the procedures for liquidity management are two types: normal and crisis conditions. Procedure on liquidity management in normal conditions, will cover the main objectives of the bank about the need to maintain adequate liquidity, and procedure on liquidity management in crisis conditions, include possible alternative plans to overcome crisis. In a time of crisis, following elements are found to be very important: existence of streams of information to enable taking quick and timely decisions, building relationships with suppliers for funding sources, taking measures to amend the evolution of assets and liabilities, use of credit facilities, orientation to the alternative markets for obtain liquidity. Financial institutions prepare monthly reports about gaps of liquidity on each main currency (RON, EUR, USD), and a cumulated report on all currencies. Assets and liabilities are distributed on time intervals (maturity bands), which are determined individually by each bank depending on their risk profile: 1 day, 2-7 days, 8-30 days, 31-90 days, 90-180 days, 181-365 days, 1-5 years, 5-10 years and over 10 years. Also, are formulated a set of work hypotheses, related on the maturity of balance sheet items, be determined based on historical information, or be based on market conditions. Assets are inflows, and liabilities are outflows. Liquidity gaps are generally close to 0 values, and with as the gap is greater, the greater is the risk of liquidity. For a given maturity, value of liquidity is the difference between liabilities and assets in balance sheet. Coverage of liquidity involves obtaining the necessary funding, which balances on the current cash, but generates under- consolidation or over -consolidation of balance sheet, for future periods (Dedu, 2008). Is important therefore to determinate the global consolidation of balance sheet, in the future periods.

For determining the exposure of the commercial bank "X", branch "A", to the liquidity risk, is used a complex system of indicators, which are based on the distribution of bank assets and liabilities depending on their maturity. These indicators give an overall picture of the degree of liquidity for banking unit and for the management of liquidity of the bank.

3. The analysis of the liquidity indicators

In practice, are important two types of liquidity indicators: 1. indicators of liquidity imposed by the surveillance system, ranging from a national system to another, having as source the regulations issued by the European Central Bank; 2. internal indicators of liquidity which are calculated by the bank from their own experience and are considered estimators to assess liquidity risk.

Table 1: Dynamic of simple net liabilities(successive) on maturity bands to 31.01. N, 31.01. N+1, 31.01. N+2 - RON -

No.	Maturity	Assets	Liabilities	Simple net liabilities
31.01. N				
1.	< 1 month	111 322 473	162 122 388	50 799 915
2.	1-3 months	43 398 126	35 496 402	-7 901 724
3.	3-12 months	62 601 821	29 195 109	-33 406 712
4.	1-5 years	29 595 047	8 790 921	-20 804 126
5.	> 5 years	47 588 558	58 901 205	11 312 647
6.	Total	294 506 025	294 506 025	0
31.01. N+1				
1.	< 1 month	110 907 902	184 808 806	73 900 904
2.	1-3 months	43 297 081	29 127 071	-14 170 010
3.	3-12 months	62 460 359	12 361 347	-50 099 012
4.	1-5 years	29 527 684	6 972 364	-22 555 320
5.	> 5 years	47 639 369	60 562 807	12 923 438
6.	Total	293 832 395	293 832 395	0
31.01. N+2				
1.	< 1 month	177 420 034	280 397 736	102 977 702
2.	1-3 months	66 386 195	44 673 740	-21 712 455
3.	3-12 months	85 718 810	19 288 081	-66 430 729
4.	1-5 years	49 453 580	11 128 405	-38 325 175
5.	> 5 years	68 781 200	92 271 857	23 490 657
6.	Total	447 759 819	447 753 819	0

Source: Trial balances of commercial bank "X", branch "A"

Explanations: Net liabilities are calculated for each period as the difference between liabilities and assets at the same maturity. This indicator shows, for each period, degree to which assets cover obligations due.

Simple net liabilities = Liabilities – Assets (on every maturity band).

Table 2: Determination of cumulative net liabilities on each maturity band to 31.01.N, 31.01. N+1, 31.01. N+2 -RON -

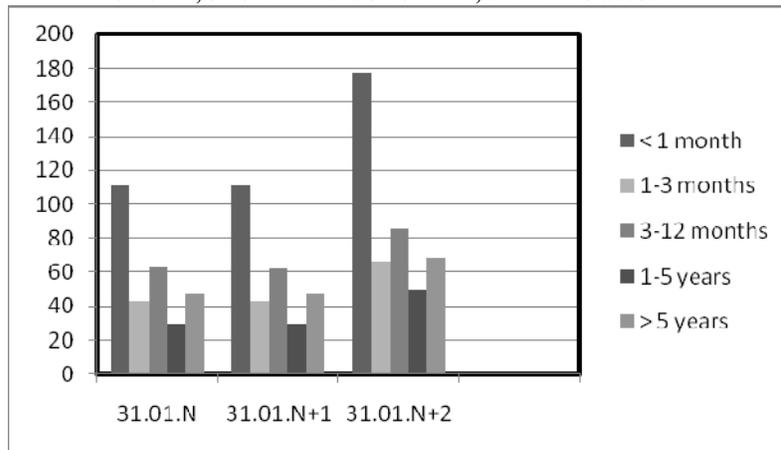
No.	Maturity	Cumulative assets	Cumulative liabilities	Cumulative net liabilities
31.01. N				
1.	< 1 month	111 322 473	1 62 122 388	50 799 915
2.	1-3 months	154 720 599	197 618 790	42 898 191
3.	3-12 months	217 322 420	226 813 899	9 491 479
4.	1-5 years	246 917 467	235 604 820	-11 312 647
5.	> 5 years	294 506 025	294 506 025	0
31.01. N+1				
1.	< 1 month	110 907 902	184 818 806	73 900 904
2.	1-3 months	154 204 983	213 935 877	59 730 894
3.	3-12 months	216 665 342	226 297 224	9 631 882
4.	1-5 years	246 193 026	233 269 588	-12 923 438
5.	> 5 years	293 832 395	293 832 395	0
31.01. N+2				
1.	< 1 month	177 420 034	280 397 736	102 977 702
2.	1-3 months	243 806 229	325 071 476	81 265 247
3.	3-12 months	329 525 039	344 359 557	14 834 518
4.	1-5 years	378 978 619	355 487 962	-23 490 659
5.	> 5 years	447 759 819	447 759 819	0

Source: Trial balances of commercial bank "X", branch "A"

Explanations: Cumulative net liabilities are calculated as the difference between cumulative liabilities and cumulative assets for each period of time. Indicator is used to indicate the period of maximum of need of liquidity.

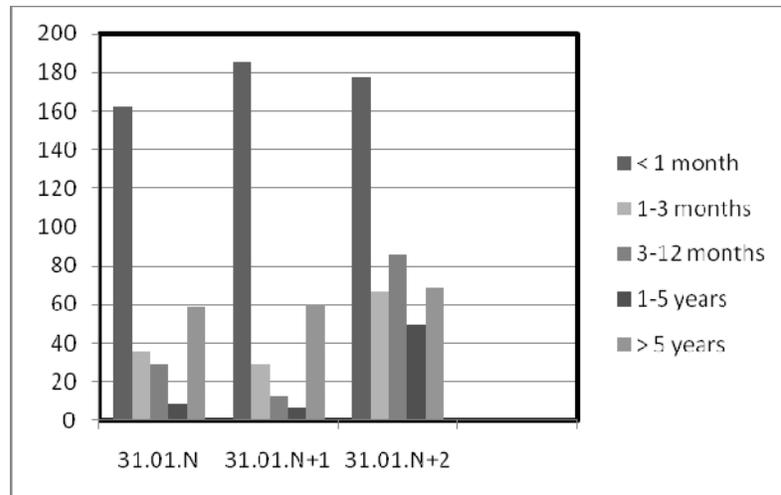
Cumulative net liabilities = Cumulative liabilities – Cumulative assets (on every maturity band).

Figure 1: Dynamic of assets on maturity bands, for periods 31.01.N, 31.01.N+1 and 31.01.N+2, taken into account



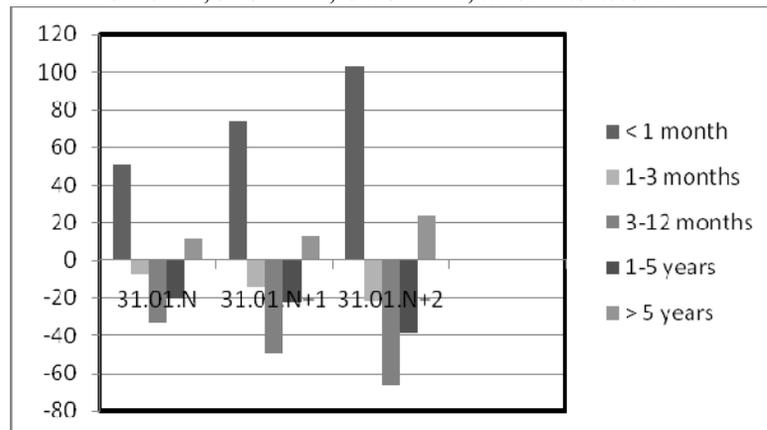
Source: The data are taken from table no. 1

Figure 2: Dynamic of liabilities on maturity bands, for periods 31.01.N, 31.01.N+1 and 31.01.N+2, taken into account



Source: The data are taken from table no. 1

Figure 3: Dynamic of simple net liabilities(successive) on maturity bands for periods 31. 01. N, 31 01. N+1, 31. 01. N+2, taken into account



Source: The data are taken from table no. 1

Table 3: Determination of liquidity index for periods 31.01.N, 31.01.N+1, 31.01.N+2 - RON –

No.	Maturity	Assets	Liabilities	Weighting -years-	Assets x years	Liabilities x years
31.01.N						
1.	< 1 month	111 322 473	162 122 388	0,043	4 786 866	6 971 263
2.	1-3 months	43 398 126	35 496 402	0,160	6 943 700	5 679 424
3.	3-12 months	62 601 821	29 195 109	0,625	43 465 950	18 246 943
4.	1-5 years	29 595 047	8 790 921	3,000	88 785 141	26 372 763
5.	> 5 years	47 588 558	58 901 205	7,500	356 914 185	441 759 038
6.	Total	294 506 025	294 506 025	-	500 895 842	499 029 431
31.01.N+1						
1.	< 1 month	110 907 902	184 808 806	0,043	4 769 040	7 946 779
2.	1-3 months	43 297 081	29 127 071	0,160	6 927 533	4 660 331
3.	3-12 months	62 460 359	12 361 347	0,625	39 037 724	7 725 842
4.	1-5 years	29 527 684	6 972 364	3,000	88 583 052	20 917 092
5.	> 5 years	47 639 369	60 562 807	7,500	357 295 268	454 221 053
6.	Total	293 832 395	293 832 395	-	496 612 617	495 471 097
31.01.N+2						
1.	< 1 month	177 420 034	280 397 736	0,043	7 629 061	12 057 103
2.	1-3 months	66 386 195	44 673 740	0,160	10 621 791	7 147 798
3.	3-12 months	85 718 810	19 288 081	0,625	53 574 256	16 522 425
4.	1-5 years	49 453 580	11 128 405	3,000	148 360 740	33 385 215
5.	> 5 years	68 781 200	92 271 857	7,500	515 859 000	692 038 928
6.	Total	447 759 819	447 759 819	-	736 044 848	761 151 469

Source: Trial balances of commercial bank "X", branch "A"

Liquidity index is the ratio between the total amount of liabilities and total amount of assets, both multiplied with the average number of days or with the average number of years.

The index value depends on the size of ratio between assets and liabilities for each period and in practice can be found following situations:

- when is equals with 1 there is no need for maturity transformation;
- when the value is less than 1, the transformation which is done is from short term liabilities in long-term assets;
- when the value is higher than 1, the transformation which is done is from long-term liabilities in short-term assets.

If the liquidity index recorded values less than 1, in the literature is estimated that the bank has an advantage when the curve of interest rate is increasing (Danilă; Anghel, 2002).

To calculate the index must be a database, on bank assets and liabilities grouped by periods depending of their maturity. Weighting can be done with an average number of days, weeks or months of each period, or with the number of years corresponding to each maturity band, both for assets and liabilities. The first variant of weighting, especially when is using a number of days, is more accurate, but the latter is easier to apply. In terms of liquidity, the optimal value of the index is 1.

Using data from tables 1, 2 and 3, it can determinate the following indicators to measure liquidity risk:

-liquidity index (I_l):

$$I_{l\ 31.01.N} = \frac{\text{Assets}}{\text{Liabilities}} = 0,996 \quad (1)$$

$$I_{l\ 31.01.N+1} = \frac{\text{Assets}}{\text{Liabilities}} = 0,998 \quad (1)$$

$$I_{l\ 31.01.N+2} = \frac{\text{Assets}}{\text{Liabilities}} = 1,034 \quad (1)$$

- average maturity of assets (t_A):

$$t_{A\ 31.01.N} = = = 1,70 \text{ years} = 20,4 \text{ months} = 612 \text{ days} \quad (2)$$

$$t_{A\ 31.01.N+1} = = = 1,69 \text{ years} = 20,3 \text{ months} = 608,4 \text{ days} \quad (2)$$

$$t_{A\ 31.01.N+2} = = = 1,64 \text{ years} = 19,68 \text{ months} = 590,4 \text{ days} \quad (2)$$

-average maturity of liabilities (t_p):

$$t_{p\ 31.01.N} = = = 1,69 \text{ years} = 20,28 \text{ months} = 608,4 \text{ days} \quad (3)$$

$$t_{p\ 31.01.N+1} = = = 1,68 \text{ years} = 20,16 \text{ months} = 604,8 \text{ days} \quad (3)$$

$$t_{p\ 31.01.N+2} = = = 1,70 \text{ years} = 20,4 \text{ months} = 612 \text{ days} \quad (3)$$

-average transformation of maturity (T_s):

$$T_{s\ 31.01.N} = t_A - t_p = 612 - 608,4 = 3,6 \text{ days} \quad (4)$$

$$T_{s\ 31.01.N+1} = t_A - t_p = 608,4 - 604,8 = 3,6 \text{ days} \quad (4)$$

$$T_{s\ 31.01.N+2} = t_A - t_p = 590,4 - 612 = -21,6 \text{ days} \quad (4)$$

Based on data obtained from measurement of liquidity risk and comparing the results for the three periods considered (N, N+1, N+2) can be done the analysis about exposure of commercial bank "X", branch "A" to this category of risk

Table 4: Centralizing of indicators to measure liquidity risk

No.	Specification U/M	Period			Dynamic (coefficients)		
		31.01.N	31.01.N+1	31.01.N+2	N+1/N	N+2/N+1	N+2/N
1.	Liquidity index	0,996	0,998	1,034	1,002	1,036	1,038
2.	Average maturity of assets	612	608,4	590,4	0,994	0,970	0,964
3.	Average maturity of liabilities	608,4	604,8	612	0,994	1,005	1,006
4.	Average transformation of maturity	3,6	3,6	-21,6	1,00	-6,28	-6,28

From centralizing liquidity risk indicators (table no.4) result that for the period 31.01.N+2 exposure of commercial bank "X", branch "A" is almost zero, because the indicators which are calculate for this type of risk have very good values. For periods 31.01.N and 31.01.N+1 there is an exposure to this type of risk, not very large, but there is anyhow. Liquidity index has values higher than 1 for period 31.01.N+2 which means that the transformation of maturity, which should be practiced by the bank, is from the long-term liabilities in short-term assets. In other words, for this period, practically there is no liquidity risk, because the assets reached the maturity before the sources which funded these assets. For the other two periods (31.01.N and 31.01.N+1) liquidity index values are close to optimal, which is 1 (0,996, 0,998), which shows that this reduced level of liquidity risk does not significantly affect the profitability of commercial bank. These conclusions are confirmed, also, by the information which are provided by the graphs from figures 1, 2 and 3. Liquidity index, globally calculated, does not give an overview image, just one indicative image, which not allows identifying the maturity ranges, which enhance the liquidity risk. Analyzing the level of average maturity for assets and liabilities, result that for the period 31.01.N+2, average maturity of liabilities exceeds the average maturity of assets, which means that the bank, for this period, was financed, primarily, on long term, in conformity with the maturity with which are placed the resources. With other words, the resources reach to maturity about in the same time with the investments, which means in this period it was a good management of liquidity risk.

The indicator of average transformation of maturity shows best the level of liquidity risk (table no.5), because the operation of transformation, which is practiced by the bank, is expressed in units of time. The values of this indicator shows that only for the period 31.01.N+2, liabilities reach maturity after the maturity for assets, respectively after 21.6 days, making necessary apacement of money for the bank.

Table 5: Average transformation of maturity

3,6 days		3,6 days			21,6 days
Sc _P 608,4 days	Sc _A 612 days	Sc _P 604,8 days	Sc _A 608,4 days	Sc _P 612 days	Sc _A 590,4 days
31.01.N		31.01.N+1		31.01.N+2	

Table 6: The evolution of simple net liabilities- RON -

No.	Maturity	Period			Dynamic (coefficient)		
		31.01. N	31.01. N+1	31.01. N+2	N+1/N	N+2/N+1	N+2/N
1.	<1 month	50 799 915	73 900 904	102 977 702	1,45	1,39	2,03
2.	1-3 months	-7 901 724	-14 170 010	-21 712 455	1,79	1,53	2,75
3.	3-12 months	-33 406 712	-50 099 012	-66 430 729	1,50	1,33	1,99
4.	1-5 years	-20 804 126	-22 555 320	-38 325 175	1,08	1,70	1,84
5.	> 5 years	11 312 647	12 923 438	23 490 657	1,14	1,82	2,08

Table 7: The evolution of cumulative net liabilities- RON -

No.	Maturity	Period			Dynamic (coefficient)		
		31.01. N	31.01. N+1	31.01. N+2	N+1/N	N+2/N+1	N+2/N
1.	<1 month	50 799 915	73 900 904	102 977 702	1,45	1,39	2,03
2.	1-3 months	42 898 191	59 730 894	81 265 247	1,39	1,36	1,89
3.	3-12 months	9 491 479	9 631 882	14 834 518	1,01	1,54	1,56
4.	1-5 years	-11 312 647	-12 923 438	-23 490 659	1,14	1,82	2,08
5.	> 5 years	0	0	0	-	-	-

Analysis of net liabilities on each maturity band (table no. 6 and 7) shows degree to which assets cover obligations due for the period taken into account. The need for liquidity arises there where the simple net liabilities are positive, situation encountered for the three periods, taken into account, for bands with maturity less than 1 month and those which have maturity over five years.

The cumulative net liabilities indicate which is the need to cover the deficit of liquidity created. This situation is recorded on the first maturity band (<1 month) to 31.01.N at the level of 50 799 915 RON, to 31.01.N+1, by 1,45 times higher respectively, 73 900 904 RON, and for the same maturity band (<1 month) to 31.01.N+2, this indicator registered a value by 2, 03 times higher, compared with N period, respectively, 102 977 702 RON.

4. Conclusions

After determining and tracking indicators of liquidity on maturity bands, is obtaining an accurate picture of the degree of liquidity for the financial institution, and also over the quality of bank liquidity management. Thus, if the bank determines that the position of liquidity is negative, in this case it must rely on loans from the interbank market, for the full honor for due obligations and also, if it determines that liquidity position is positive, in this case the excess of liquidity is placed on short-term, as deposits on the interbank market. Also, in situation when the Romanian banking system depends increasingly more by resources with high level of volatility, importance of developing and implementing strategies related to adequate management of liquidity, becomes more pronounced. If the banks are exposed to liquidity shocks, is recommended elaboration of alternative plans for emergency cases by the bank management, plans which are based on three types of crisis scenarios, respectively, scenarios related to the specific of bank, scenarios related to market, and a combination of the two types of scenarios.

5. References

- Badea, L.; Socol, A.; Dragoi, V.; Driga, I. (2010) *Management of banking risk*. Bucharest: Publishing Economic.
- Dănila, N.; Anghel, L. (2002) *Management of bank liquidity*. Bucharest: Publishing Economic.
- Dedu, V. (2008) *Management and banking audit*. Bucharest: Publishing Economic.
- Jorion, P. (2000) *Value at Risk*. New York: Publishing Mc Grow Hill.

- Matz, L.; Neu, P. (2007) Liquidity Risk. Management and measurement, *A practitioner's guide to global best practices*, Singapore: Wiley Finance, p.71-75.
- Stancu, I. (2004) *Finance, Financial markets and portfolio management*, volume I. Bucharest: Publishing Economic.

THE STYLIZED FACTS OF ASSET RETURNS AND THEIR IMPACT ON VALUE-AT-RISK MODELS

IORGULESCU Filip

Teaching assistant/ Ph. D. student, Faculty of Finance, Insurance, Banking and Stock Exchange, Department of Finance, Bucharest University of Economic Studies, Bucharest, Romania, fileos1984@yahoo.com

Abstract: *This paper aims to explore the most important stylized facts of asset returns and their impact on the development of Value-at-Risk models. The analysis was performed on the daily returns of the BET index and of four stocks, traded at Bucharest Stock Exchange, and covered a period of five years between 2006 and 2011. The results proved that, despite being researched for a long time, stylized facts continue to be relevant even in the context of the Romanian capital market. Furthermore, financial institutions should take them into account very seriously when estimating Value-at-Risk.*

Key words: stylized fact, asset returns, Value-at-Risk, volatility model, fat tails

JEL classification: G 17, G 32

1. Introduction

Value-at-Risk (VaR) is a simple risk measure which captures only the downside risk by estimating the expected loss of a portfolio. Since VaR represents the standard risk measure for financial institutions, it is worth to take a closer look into the estimation process of the VaR number. The popularity of VaR is mainly based on its simple and easy-to-understand nature. However, the simple risk number may not be that simple to obtain. An analytical VaR model, as described, for example, in Christoffersen (2003), requires a three-step process:

- A volatility model for the returns of every asset that is included in the portfolio;
- A model that drives the correlations between asset returns. The first two steps will result into a volatility model for the portfolio;
- A model for the distribution of the standardized returns of the portfolio which will enable the estimation of the VaR quantile.

Certainly, the simple risk measure does not appear to be that simple after all. Another issue, that can be easily noticed, is that every step of the estimation process refers to modelling a certain aspect of asset returns. As a consequence, before setting out to develop a VaR model, a key step would be to observe carefully the characteristics of asset returns because they have a huge impact when choosing between different models.

The typical characteristics of asset returns, generally called *stylized empirical facts* (Cont, 2001, p. 224), have been thoroughly studied by economists and mathematicians, as well, because their nature is mainly statistical. Hence, the previous literature on this subject offers an extensive range of theoretical and empirical studies such as Fama (1965), Blattberg and Gonedes (1974), Kon (1984), Bollerslev *et al.* (1992), Pagan (1996), Cont (1999) and many others. Among them, Cont (2001) and Christoffersen (2003) realized a comprehensive review of the stylized facts of asset returns. An interesting feature concerning these stylized facts must be stated: they seem to apply irrespective of asset type, market or time interval. Therefore, stylized facts continue to represent an up-to-date research topic although it has been studied for more than 50 years.

2. Stylized Facts and their Impact on VaR models

Since VaR is essentially based on modelling asset returns, financial institutions should take into account the stylized facts very seriously if they want to obtain accurate estimates. As highlighted by Cont (2001) and Christoffersen (2003), there are several areas where stylized facts have a major influence on the choice of models.

First of all, when modelling the volatility of the returns one should keep in mind that high volatility events tend to be clustered in time (Cont, 2001, p. 224). This phenomenon is called volatility clustering and it means that volatility proxies for asset returns exhibit a positive autocorrelation over short time intervals. Moreover, in the case of stocks and stock indices, there is a negative autocorrelation between volatility and returns. This is known as the leverage effect and it means that a negative return

will trigger a larger volatility increase than a positive return of the same magnitude. Christoffersen (2003) explains this by the fact that a price drop diminishes the firm's equity, thus, increasing the leverage.

Consequently, financial institutions should employ volatility models that are able to accommodate volatility clustering and leverage effect. Probably the most obvious choice would be to use asymmetric GARCH-type models (such as TARARCH or EGARCH, for example). Also, taking into account that trading volume is correlated with the volatility of the returns, Christoffersen (2003) suggested the improvement of GARCH models by including the trading volume among the explanatory variables from the volatility equation.

However, Berkowitz and O'Brien (2002) and Pérignon and Smith (2010), after analyzing some of the largest US and international commercial banks, drew attention to a concerning fact: banks continue to rely on risk models that perform quite poorly in forecasting volatility changes. This results in the clustering of VaR violations which, in turn, leads to a serious increase in the bankruptcy risk. Therefore, it appears that while the stylized facts of asset returns have been studied for so long, financial institutions may be still ignoring them.

The second step of a VaR model refers to modelling the correlations between asset returns. One of the fastest and easiest choices is to rely on the historical correlation coefficients between the standardized returns. This represents the constant conditional correlation (CCC) model which was proposed by Bollerslev (1990). Yet, Christoffersen (2003) highlighted another stylized fact: the correlations between asset returns are not constant in time. They tend to increase in bear markets, especially during market crashes. In this view, the correlations may be better fitted by a time-varying model, such as the dynamic conditional correlation (DCC) model, formulated by Tse and Tsui (2002) and Engle (2002). Also, since VaR models often work with the standardized returns, it should be taken into account that, at short time intervals, the standard deviation of the returns is much higher than the mean. Thus, the mean is not statistically significant and it should be ignored when standardizing the returns or computing VaR.

The third and final step refers to modelling the distribution of the standardized returns in order to obtain the VaR quantile. As shown by Codîrlășu (2007), the normal distribution continues to be the preferred choice for many financial institutions. However, this may be a serious problem because two well-established stylized facts strongly reject the normality hypothesis. Firstly, assets exhibit a noticeable asymmetry between large negative returns and positive ones, leading to asymmetric distributions with negative skewness. Secondly, asset returns distributions display fatter tails than the normal distribution, meaning that the probability of an extreme return is larger than the probability described by the normal distribution. Moreover, even when the returns are standardized using conditional volatility models (in order to eliminate the influence of volatility clustering) they continue to display fat tails. Thus, choosing an appropriate volatility model in the first step, although it will diminish the fat tails, will not solve the problem entirely.

Consequently, the normal distribution is not suitable for modelling the standardized returns because, in the context of VaR computation, it leads to underestimating the expected loss of the portfolio. The existing literature on this subject offers numerous alternatives for modeling the distribution of the standardized returns, such as: the Student's t distribution (Bollerslev, 1987), the stable distribution (Blattberg and Gonedes, 1974), the generalized hyperbolic distribution (Necula, 2008), the Extreme Value Theory (McNeil and Frey, 2000), historical simulation (Boudoukh *et al.*, 1998; Christoffersen, 2003), the Cornish-Fisher approximation to quantiles (Christoffersen, 2003) and many others.

It must be mentioned that, while the stylized facts of asset returns seem to be accepted by the entire scientific community, there are certain researchers who disagree. For example, Kim and White (2003) consider that asymmetry and fat tails are questionable because the conventional measures of skewness and kurtosis are greatly influenced by outliers. Instead, they proposed the use of robust measures of skewness and kurtosis, based on quantiles, and employed Monte Carlo simulations in order to observe the differences between conventional and robust measures. Kim and White concluded that asymmetry and fat tails, as well as the conventional measures of skewness and kurtosis, should be regarded with skepticism and that the traditional stylized facts might need to be reconsidered.

This section offered a brief presentation of the main characteristics of asset returns that play an important role when estimating VaR. As pointed out above, these stylized facts restrict the choice of models when developing a VaR approach but previous research on the subject provides numerous alternatives. Nevertheless, Cont (2001) concluded that modelling asset returns might prove to be very challenging because the stylized facts are quite constraining. Also, given the numerous alternatives

presented in the literature, it may be difficult to choose the model that fits best the data set. On the other hand, it should be taken into account that, while stylized facts seem to be generally accepted, some researchers still regard them as questionable.

Considering the findings from previous studies, this paper aims to explore some of the stylized facts of asset returns and their impact on VaR models in the context of the Romanian capital market. Therefore, Section 3 presents the data and methodology of the study, Section 4 gives the results of the study and Section 5 presents the conclusions of the paper.

3. Data and Methodology

The analysis was performed on the daily returns of the following stocks, traded at Bucharest Stock Exchange (BSE): Biofarm (BIO – pharmaceuticals), BRD – Groupe Société Générale (BRD – banking and insurance), OMV Petrom (SNP – crude oil exploitation) and Transelectrica (TEL – electric energy transportation) and on the daily returns of the Bucharest Exchange Trading (BET), that is the reference index for BSE. By analyzing four of the most representative and liquid stocks traded at BSE, as well as the BSE reference index, this study aims to offer a general overview of the stylized facts in the context of the Romanian capital market.

The returns series were computed using the daily adjusted close values of the stocks and of the BET index (obtained from <http://www.tranzactiibursiere.ro/>) and cover a period of five years, between October 2006 and September 2011 (1180 observations for each series).

The analysis began by checking the stylized facts that affect the volatility of asset returns because forecasting the volatility of returns represents the first step of an analytical VaR model. Following Patton (2011) two volatility proxies were considered: the squared returns, which are rather noisy, and the intra-daily range which is more efficient. The intra-daily range was computed as follows:

$$(1) \quad RG_t^2 = \frac{1}{4\ln(2)} \left[\ln(S_t^{High}) - \ln(S_t^{Low}) \right]^2$$

where S_t^{High} and S_t^{Low} are the highest and the lowest prices recorded during the day t .

In order to check for volatility clustering, the first 100 autocorrelations of the squared returns and of the intra-daily range were computed for the stocks and for the BET index using Eviews. The statistical significance of the autocorrelations was checked with the aid of the Ljung-Box Q-statistic. Then, the leverage effect was highlighted by computing, in each case, the correlation coefficients between the series of returns and the two volatility proxies.

Since both stylized facts were confirmed, the analysis was further developed by considering the following choices for modelling the volatility of the stocks and of the BET index: a 60-day rolling window forecast, the EWMA model, the GARCH (1,1) model, the TARCh (1,1,1) model and the EGARCH (1,1,1) model. The performance of each volatility forecast was assessed by means of the Mincer-Zarnowitz regression, given in Equation (2).

$$(2) \quad \sigma_t^2 = \beta_0 + \beta_1 h_{it} + \varepsilon_{it}$$

where σ_t^2 is an unbiased volatility proxy and h_{it} is a volatility forecast. Meddahi (2002) showed that volatility forecasts can be ranked on the basis of the R-squared from the regression presented above. The ranking of the five volatility models was done, in each case, using both the squared returns and the intra-daily range as volatility proxies.

Next, the analysis proceeded to the second step of VaR computation: modeling the volatility of the portfolio consisting of the four stocks. As Christoffersen (2003) pointed out that correlations are time-varying, the volatility of the portfolio was modeled with the aid of both the CCC and DCC approaches. Then, they were also ranked using the Mincer-Zarnowitz regression in order to check if the time-varying correlations are better modeled by a DCC approach. Since the intraday returns were not available for the portfolio, the ranking was made only by means of the squared returns. It must be stated that all the rankings were made in an out-of-sample approach. Thus, the parameters of the volatility models were estimated using the first four years of data, while the fifth year was used to backtest the volatility forecasts produced by each model.

Then, the statistical significance of the mean of the daily returns was checked by means of the t test performed in Eviews.

Finally, the distributional stylized facts of asset returns were accounted for. Considering the arguments raised by Kim and White (2003), the properties of left asymmetry and fat tails were checked by computing both conventional and robust measures of skewness and excess kurtosis. Thus, the following robust measures were computed, as proposed by Kim and White: the Bowley skewness coefficient (Bowley, 1920) given by Equation (3), the Pearson skewness coefficient (Kendall and Stuart, 1977) given by Equation (4), the Moors centered kurtosis coefficient (Moors, 1988) given by Equation (5) and the Crow and Siddiqui centered kurtosis coefficient (Crow and Siddiqui, 1967) given by Equation (6).

$$(3) \quad SK_B = \frac{Q_3 + Q_1 - 2Q_2}{Q_3 - Q_1}$$

$$(4) \quad SK_P = \frac{\mu - Q_2}{\sigma}$$

$$(5) \quad KR_M = \frac{E_7 - E_5 + E_3 - E_1}{E_6 - E_2} - 1.23$$

$$(6) \quad KR_{CS} = \frac{F^{-1}(0.975) - F^{-1}(0.025)}{F^{-1}(0.75) - F^{-1}(0.25)} - 2.91$$

where Q_i is the i^{th} quartile of the data series, E_i is the i^{th} octile of the data series, F^{-1} is the inverse of the cumulative distribution function, μ is the mean and σ is the standard deviation of the sample. Moreover, because another stylized fact state that even conditional returns exhibit fat tails, the series of returns (of the stocks and of the BET index) were standardized using a simple GARCH volatility model and, then, the conventional and robust measures of excess kurtosis were computed in order to check the presence of fat tails.

Eventually, the analysis focused on the impact of the fat tails on estimating VaR. Thus, the VaR quantiles for the portfolio consisting of the four stocks were estimated using the following tools that accommodate fat tails: the Student's t distribution, the generalized hyperbolic (GH) distribution, the Extreme Value Theory (EVT) and the Cornish-Fisher (CF) approximation to quantiles. Then, the results were compared to the corresponding quantile from the standard normal distribution to check if it leads to underestimating the expected loss of the portfolio.

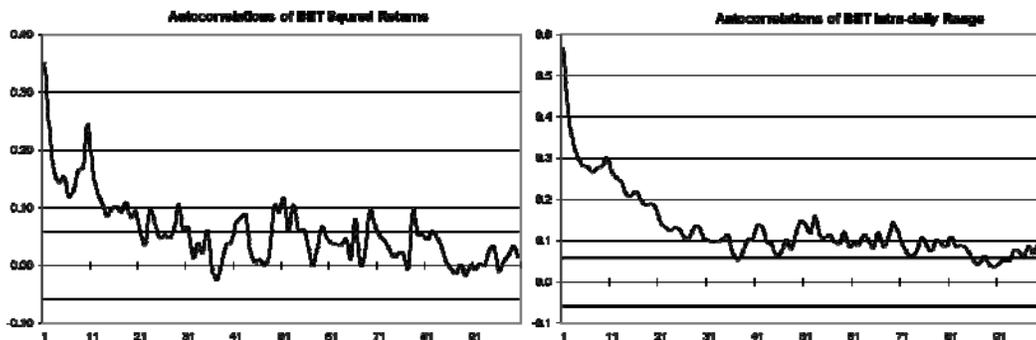
4. Results

To begin with, the first 100 autocorrelations of the squared returns and of the intra-daily range were computed for the stocks and for the BET index in order to check for volatility clustering. Table 1 presents the number of lags for which the autocorrelations were positive and statistically significant. An autocorrelation was considered significant if the p-value of the associated Ljung-Box Q-statistic was lower than or equal to 5%. Moreover, in order to get a better view of the volatility clustering effect, Figure 1 shows the graphs of the autocorrelations of the squared returns and of the intra-daily range for the BET index against the Bartlett standard error bands.

Table 1: Number of Lags for which Autocorrelations were Positive and Statistically Significant

Volatility proxy	BIO	BRD	SNP	TEL	BET
Squared returns	46	31	42	36	35
Intra-daily Range	100	100	100	88	100

Figure 1: Autocorrelations of BET Squared Returns and BET Intra-daily Range versus Bartlett Standard Error Bands



As proven by the results presented above, volatility clustering is strongly affecting the series of daily returns, both in the case of the stocks and of the BET index. Also, the autocorrelations appear to be higher and more persistent in the case of intra-daily range comparative to the squared returns. This finding is in line with Christoffersen (2003) who explains it by the fact that intra-daily range is less noisy than squared returns.

The analysis continued by computing the correlation coefficients between the series of returns and the two volatility proxies in order to expose the leverage effect. The results are shown in Table 2.

Table 2: Correlation Coefficients between the Series of Returns and the Volatility Proxies

Volatility proxy	BIO	BRD	SNP	TEL	BET
Squared returns	-0.078	-0.149	-0.129	-0.022	-0.225
Intra-daily Range	-0.130	-0.112	-0.104	-0.072	-0.209

According to the correlation coefficients presented above, the leverage effect is present in each case although it seems to be mild because their values are not far from 0. It is interesting to notice that the leverage effect appears to be the strongest in the case of BET index.

Taking into account that all data series exhibited volatility clustering and leverage effect, a reasonable conclusion would be that VaR models should be built on asymmetric conditional volatility models. In order to test this hypothesis the volatility of each series of returns was modeled with the aid of three symmetric conditional volatility models (the 60-day rolling window, EWMA and GARCH (1,1)) and two asymmetric conditional volatility models (TARCH (1,1,1) and EGARCH (1,1,1)). The models were ranked by means of the R-squared from the Mincer-Zarnowitz regression presented in the previous section. Since two volatility proxies were available (the squared returns and the intra-daily range), two rankings were obtained in each case. Table 3 presents the volatility models that fitted best the data sets according to the two rankings.

Table 3: Top-ranked Volatility Models for the Stocks and for the BET Index

Volatility proxy	BIO	BRD	SNP	TEL	BET
Squared returns	TARCH	TARCH	GARCH	EGARCH	EGARCH
Intra-daily Range	TARCH	TARCH	TARCH	EGARCH	EGARCH

The results presented above support the initial hypothesis. In all cases but one an asymmetric conditional volatility model ranked first proving that such models are able to better accommodate the stylized facts of asset returns. Moreover, it should be noticed that, although the two volatility proxies led to quite different results in terms of autocorrelations (see Table 1), they arrived to almost the same outcome when selecting the best volatility model.

The analysis continued by taking into account that correlations between asset returns are not constant in time. Consequently, when building a VaR model, the volatility of the portfolio should be forecasted using an approach which generates time-varying correlations, such as DCC. The DCC was applied to the portfolio consisting of the four stocks using both a EWMA-type specification and a GARCH-type specification. For comparative purposes the volatility of the portfolio was also forecasted using a CCC model. The volatility forecasts were ranked using the same method as before but, in the absence of portfolio intra-daily range, only on the basis of squared returns. Surprisingly, the CCC ranked first, followed by DCC GARCH, while DCC EWMA came last. Therefore, this stylized fact of asset returns does not have an important impact on the considered portfolio. It must also be stated that not all researchers include time-varying correlations among stylized facts (for example, Cont, 2001). Also, in the context of VaR computation, the results of Iorgulescu and Stancu (2008) showed that CCC volatility models generally lead to more accurate VaR estimates than those based on DCC models.

Next, Table 4 presents the results of the t test, performed in Eviews, in order to check the statistical significance of the mean of the daily returns.

Table 4: Results of the Significance Test for the Mean of the Returns

Indicator	BIO	BRD	SNP	TEL	BET
Mean	-0.03%	-0.04%	-0.05%	-0.04%	-0.05%
Standard Deviation	3.25%	3.07%	3.12%	2.76%	2.13%
t statistic	-0.352	-0.402	-0.599	-0.543	-0.859

p-value	0.725	0.688	0.549	0.587	0.390
----------------	-------	-------	-------	-------	-------

As shown above, the mean of the returns is completely dominated by the corresponding standard deviation in each case. The results are also strongly affected by the global economic crisis which explains the unusual high values of the standard deviation and the negative average values of the returns. The p -values of the t test are much higher than 5% indicating that, in all cases, the mean of the returns is not statistically different from 0. This stylized fact is strongly confirmed, meaning that the mean of the returns should be ignored when standardizing asset returns and estimating VaR.

The final part of the analysis was dedicated to exploring the distributional characteristics of asset returns. In order to check the left asymmetry and the fat tails of the returns the conventional measures of skewness and excess kurtosis were computed. Moreover, taking into account the criticisms of Kim and White (2003), robust measures of skewness and excess kurtosis, presented in the previous section, were also computed. Table 5 shows the results.

Table 5: Conventional and Robust Measures of Skewness and Excess Kurtosis for the Series of Returns

Indicator	BIO	BRD	SNP	TEL	BET
Conventional skewness	-0.194	-0.419	-0.344	-0.027	-0.558
Skewness (Bowley)	-0.024	0.037	-0.059	-0.044	-0.018
Skewness (Pearson)	-0.010	-0.012	-0.018	-0.016	-0.035
Conventional Excess Kurtosis	5.482	6.808	6.612	4.824	5.240
Excess Kurtosis (Moors)	0.371	0.256	0.259	0.166	0.296
Excess Kurtosis (Crow and Siddiqui)	2.024	1.408	1.376	1.335	1.419

Indeed, all the conventional measures of skewness are negative, indicating that the empirical distributions of returns are left skewed. The BET returns exhibit the most prominent asymmetry while TEL returns are nearly symmetric. Also, all conventional measures of excess kurtosis are positive and quite high which points out the presence of fat tails. Thus, as expected, the conventional measures of the third and fourth moment of the data sets confirm, without doubt, the two stylized facts.

On the other hand, the values of the robust measures of skewness and excess kurtosis lead to a conclusion which is similar to the findings of Kim and White (2003): the distributions of asset returns are almost symmetric (the skewness values are very close to 0 in all cases) and display a mild kurtosis (the returns continue to exhibit excess kurtosis but the values are much smaller than in the previous case). Therefore, once the influence of outliers (which are most probably extreme negative returns caused by the market crash in the context of the global economic crisis) is eliminated, asymmetry seems to apply no longer and the fat tails are highly ameliorated.

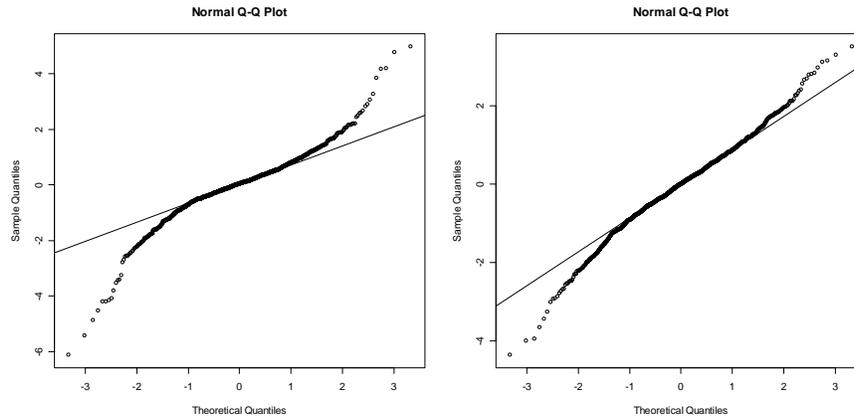
However, when estimating VaR, the focus is on fat tails rather than asymmetry because there are located the extreme losses. Also, the final step of a VaR model refers to modeling the conditional returns (returns standardized by means of a conditional volatility forecast), not the raw returns. Therefore, the analysis concluded by checking one more stylized fact: conditional returns still exhibit heavy tails. The returns of the four stocks and of the BET index were standardized using a simple GARCH volatility model. Then, the presence of fat tails was checked by computing the conventional and robust measures of excess kurtosis. The results are shown in Table 6.

Table 6: Conventional and Robust Measures of Excess Kurtosis for the Series of Standardized Returns

Indicator	BIO	BRD	SNP	TEL	BET
Conventional Excess Kurtosis	2.074	3.039	2.849	3.390	1.213
Excess Kurtosis (Moors)	0.205	0.159	0.124	0.116	0.116
Excess Kurtosis (Crow and Siddiqui)	1.152	0.690	0.549	0.914	0.603

All measures of excess kurtosis, either conventional or robust, are smaller than the corresponding values in Table 5. This indicates that, after correcting the returns for volatility clustering, the fat tails are ameliorated. However, they are not completely eliminated (even the robust measures of excess kurtosis are positive) and, thus, the stylized fact is confirmed. In order to visualize an example of the fat tails of the distribution of returns, Figure 2 shows the QQ plot of the BET raw and standardized returns against the normal distribution (QQ plot of the raw returns to the left and of the standardized returns to the right).

Figure 2: QQ Plot of the Raw and Standardized Returns of the BET Index against the Normal Distribution



The graphs presented above offer a clear look to the fat tails of the distribution of raw returns. Standardizing the returns ameliorates considerably the fat tails but fails to completely eliminate them. Therefore, it is not recommended to compute VaR using the quantiles of the standard normal distribution because, due to the presence of fat tails, it will lead to underestimating the size of extreme losses.

In order to further explore this issue, the returns of the portfolio (consisting of the four stocks) were standardized using the CCC model which ranked best in the comparison performed earlier. Then, taking into account that conditional returns continue to exhibit fat tails they were modeled with the aid of the following statistical tools that allow for leptokurtosis: the Student’s *t* distribution, the GH distribution, the EVT and the CF approximation to quantiles. Then, since 1% is the most common probability level for VaR, the first percentile of the standardized returns was obtained using each of the models mentioned above. Table 7 reports the results together with the first percentile of the standard normal distribution (N Std).

Table 7: 1% Percentiles for the Portfolio VaR

Modelling Approach	N Std	t	GH	EVT	CF
1% Percentile	-2.326	-2.845	-2.657	-2.742	-2.758

The 1% percentile from the standard normal distribution is much higher than the corresponding percentiles produced by the models that accommodate fat tails. Thus, the results in Table 7 confirm that normal distribution is not suitable for computing VaR because, in the context of fat tailed distributions, it underestimates the size of extreme losses.

5. Conclusions

This study highlighted some of the most important stylized facts of asset returns and their impact on the development of VaR models for financial institutions. The empirical analysis employed four representative stocks and the reference index of the BSE in order to offer a more general view of the Romanian capital market. The results presented in the previous section confirm that stylized facts continue to be a relevant issue when dealing with asset returns. Although many of them were discovered more than 50 years ago they still apply nowadays in the context of a young stock market, such as BSE. Therefore, every attempt to model asset returns, including VaR estimation, should take into account the impact of stylized facts very seriously.

Unfortunately, as pointed out by Berkowitz and O’Brien (2002), Pérignon and Smith (2010 and many others, the great majority of financial institutions continue to ignore the stylized facts when measuring the risk of their portfolios. The most likely reason for this situation is that, as Cont (2001) concluded, the development of a modelling approach that accommodates all stylized facts can be quite challenging. Therefore, financial institutions prefer to rely on simpler, less accurate models which imply less computational requirements. Pérignon *et al.* (2008) found that, in order to compensate for the lower performance of such models, financial institutions display a systematic excess of conservatism when

estimating VaR. This leads to artificially higher capital requirements but, unfortunately, as shown by Berkowitz and O'Brien (2002), still fails to provide reliable measurements of risk exposure. However, there are two incentives which might stimulate financial institutions to implement more suitable risk models which are able to accommodate the stylized facts of asset returns: the accuracy of VaR estimations will be sharply improved and, surprisingly, the average levels of capital requirements will be significantly lower.

Considering the results of this study there are certain guidelines that should be followed when developing a VaR model. Firstly, due to volatility clustering and leverage effect, the volatility of asset returns may be better forecasted with the aid of asymmetric conditional volatility models. For the portfolio considered here TARARCH and EGARCH performed best but this does not mean they are the only suitable models. Secondly, while correlations between asset returns may be time-varying, it is not clear if they would be better modeled by a CCC approach or a DCC approach. Previous evidence on this subject suggests that VaR estimates based on CCC tend to be more accurate but those based on DCC are less demanding on capital requirements (Iorgulescu and Stancu, 2008). Therefore, the choice of models may vary from one case to another. Thirdly, the normal distribution should not be employed in VaR models due to the fat tails exhibited by the returns series. Thus, it significantly underestimates the size of extreme losses, especially in the case of high volatility periods, such as the global economic crisis.

Finally, it must be stated that while the set of stylized facts is generally the same, irrespective of time period or asset type, there are countless models which try to accommodate them. Many researchers formulated such models which manage, more or less, to mimic the stylized facts. However, there is no such thing as the best model for asset returns. Indeed, stylized facts are not dependent on asset type and time interval but the choice of models is highly influenced by such parameters. Therefore, studying the stylized facts should not result in advocating the superiority of one model or another because none will be able to fit all series of returns. In the context of risk measurement, this means that financial institutions should regularly update their VaR models in order to insure the quality of their estimates.

6. References

- Berkowitz, J.; O'Brien, J. (2002) How Accurate Are Value-at-Risk Models at Commercial Banks?, *Journal of Finance*, 57 (3), p. 1093-1111.
- Blattberg, R.; Gonedes, N. (1974) A comparison of stable and Student distribution as statistical models for stock prices, *Journal of Business*, 47 (2), p. 244-280.
- Bollerslev, T. (1987) A Conditionally Heteroskedastic Time Series Model for Speculative Prices and Rates of Return, *Review of Economics and Statistics*, 69 (3), p. 542-547.
- Bollerslev, T. (1990) Modelling the Coherence in Short-run Nominal Exchange Rates: A Multivariate Generalized ARCH Model, *The Review of Economics and Statistics*, 72 (3), p. 498-505
- Bollerslev, T.; Chou, R.Y.; Kroner, K.F. (1992) ARCH modeling in finance: A review of the theory and empirical evidence, *Journal of Econometrics*, 52 (1-2), p. 5-59.
- Boudoukh, J.; Richardson, M.; Whitelaw, R. (1998) The Best of Both Worlds: A Hybrid Approach to Calculating Value at Risk, *Risk*, 11, p. 64-67.
- Bowley, A.L. (1920) *Elements of Statistics*, New York: Charles Scribner's Sons.
- Christoffersen, P.F. (2003) *Elements of Financial Risk Management*. San Diego: Academic Press
- Codîrlașu, A. (2007) *Managementul riscului financiar-valutar*, PhD Thesis, The Bucharest University of Economic Studies. Available at <http://www.dofin.ase.ro/acodirlasu/wp/phd2007/phdpaper.pdf>.
- Cont, R. (1999) Statistical properties of financial time series, *Mathematical Finance: Theory and Practice. Lecture Series in Applied Mathematics*, vol. 1, Beijing: Higher Education Press.
- Cont, R. (2001) Empirical properties of asset returns: stylized facts and statistical issues, *Quantitative Finance*, 1 (2), p. 223-236.
- Crow, E.L.; Siddiqui, M.M. (1967) Robust Estimation of Location, *Journal of the American Statistical Association*, 62 (318), 353-389.
- Engle, R. (2002) Dynamic Conditional Correlation: A Simple Class of Multivariate Generalized Autoregressive Conditional Heteroskedasticity Models, *Journal of Business & Economic Statistics*, 20 (3), p. 339-350.

- Fama E.F. (1965) The Behavior of Stock-Market Prices, *The Journal of Business*, 38 (1), p. 34-105.
- Iorgulescu, F.; Stancu, I. (2008) Value-at-Risk: A Comparative Analysis. *Economic Computation and Economic Cybernetics Studies and Research*, 42 (3-4), p. 5-24.
- Kendall, M.G.; Stuart, A. (1977) *The Advanced Theory of Statistics, Vol. 1*, London: Charles Griffin and Co.
- Kim, T.H.; White, H. (2003) *On More Robust Estimation of Skewness and Kurtosis: Simulation and Application to the S&P500 Index*, Department of Economics, University of California, San Diego. Available at http://www.cirano.qc.ca/realisations/grandes_conferences/methodes_econometriques/white.pdf.
- Kon, S.J. (1984) Models of Stock Returns – A Comparison, *Journal of Finance*, 39 (1), p. 147-165.
- McNeil, A.; Frey, R. (2000) Estimation of Tail-Related Risk Measures for Heteroskedastic Financial Time Series: An Extreme Value Approach, *Journal of Empirical Finance*, 7 (3-4), p. 271-300.
- Meddahi, N. (2002) A Theoretical Comparison between Integrated and Realized Volatilities, *Journal of Applied Econometrics*, 17 (5), p. 479-508.
- Moors, J.J.A. (1988) A Quantile Alternative for Kurtosis, *The Statistician*, 37 (1), p. 25-32.
- Necula, C. (2008) *Modelarea și previzionarea cursului de schimb*, PhD Thesis, The Bucharest Academy of Economic Studies. Summary available on-line at http://www.biblioteca.ase.ro/resurse/resurse_electronice/teza_capitole.php?tid=1264&qs=an%3D2008%26domeniu%3DFinante%26sort%3Dtitlu%26dir%3Dup%26pagina%3D1.
- Pagan, A. (1996) The econometrics of financial markets, *Journal of Empirical Finance*, 3 (1), p. 15-102.
- Patton, A.J. (2011) Volatility forecast comparison using imperfect volatility proxies, *Journal of Econometrics*, 160 (1), p. 246-256.
- Pérignon, C.; Deng, Z.Y.; Wang, Z.J. (2008) Do banks overstate their Value-at-Risk?, *Journal of Banking & Finance*, 32 (5), p. 783-794.
- Pérignon, C.; Smith, R.D. (2010) The level and quality of Value-at-Risk disclosure by commercial banks, *Journal of Banking & Finance*, 34 (2), p. 362-377.
- Tse, Y.K.; Tsui, A.K.C. (2002) A Multivariate Generalized Autoregressive Conditional Heteroscedasticity Model with Time-Varying Correlations, *Journal of Business & Economic Statistics*, 20 (3), p. 351-362.

ENVIRONMENTAL AUDITING PROCESS – PART OF CORPORATE SOCIAL RESPONSIBILITY REPORTING

IVAN Oana Raluca

*Ph. D. Assistant professor, Faculty of Science/Department of Economic Science and Business Administration,
1 Decembrie 1918 University, Alba-Iulia, Romania, ivanralu@yahoo.com*

PUȚAN Alina

*Ph. D. Student, Faculty of Science/Department of Economic Science and Business Administration,
1 Decembrie 1918 University, Alba-Iulia, Romania, putan.alina@yahoo.com*

Abstract: *At the end of the 1960s organization world wide became aware of the disclosures' necessity of social and environmental information about their activity. So in the beginning of 1970s companies provided the first publication of their environmental and social reporting and along come the need to audit this reporting process, although much later chronologically speaking. After an introduction to the concept, this paper focuses on the similarities and differences between different forms of environmental audit moreover on its impact on the companies' accountability in presenting the results of such audits. In view of this background, it is the aim of this paper to analyze the development of environmental audits, its current state and the implication on the social responsibility of organization that provides it.*

Key words: environmental reporting, environmental audit, disclosure, corporate responsibility

JEL classification: M 42, N 50, M 48, Q 56

1. Introduction

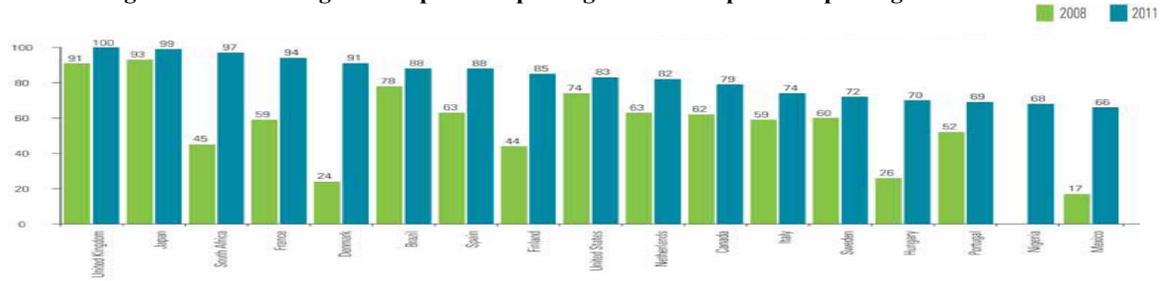
Globally, concerns about sustainable development have resulted the last decade in an exponential increase in confidence from the organizations in the systems that audit environmental impact and environmental performance, based on information provided by green accounting, as a competitive advantage in strategic positioning.

Environmental and social reporting is nowadays a “must-have” complied standard for large organization, as well as publication of sustainability report and Corporate Social Responsibility (CSR) or “corporate citizenship report” is a practice in the practice of big organizations (public/private companies or not).

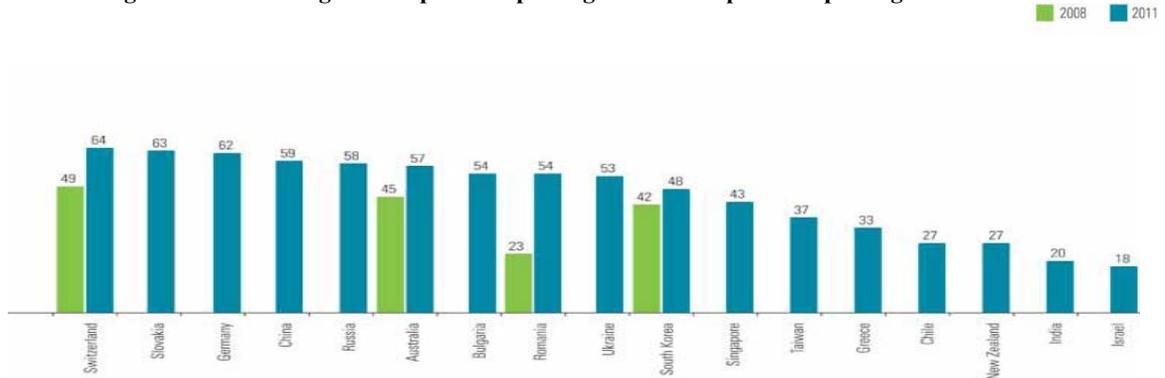
KPMG publishes periodically surveys with a world-wide consideration regarding the corporate reporting globally. For this research we took under consideration the surveys published in 1997, 1999, 2002, 2005, 2008 and 2011 regarding the corporate reporting. In this respect the survey conducted in 2011 by KPMG of more than 3400 organizations globally shows that 95% of the world's 250 biggest organizations, (according to Fortune Global 500 List 2010) issued a corporate responsibility report. Moreover 85% of this organizations published a report followed the guidelines provided by the Global Reporting Initiative (GRI).

In this moment world wide there are two renown schemes to certify the environmental information of organizations: the Eco-Management and Audit Scheme (EMAS) is the EU's voluntary scheme designed for companies and other organizations committing themselves to evaluate, manage and improve their environmental performance, and the second one is the international recognized ISO 14001 – belonging to the ISO quality set of standards.

The status of the corporate reporting in 2011 according to KPMG International Survey of Corporate Responsibility Reporting 2011 shows that environmental and social responsibility reporting has an increase importance.

Figure 1.1: Percentage of companies reporting on their corporate reporting initiatives: 2008-2011

Source: KPMG International Survey of Corporate Responsibility Reporting 2011

Figure 1.2: Percentage of companies reporting on their corporate reporting initiatives: 2008-2011

Source: KPMG International Survey of Corporate Responsibility Reporting 2011

2. Research methodology

The research methodology like in other reviews uses a two layer-approach classification, namely a chronological approach to surprise the evolution of environmental and social reporting related and of course the evolution of environmental audit types and to determine its nowadays status. Secondly, a demographical distinction is made in order to present how environmental and social reporting has spread, the related environmental audit forms.

Our study is structured as it follows: a diachronic analysis on the evolution of the environmental audit types and its determinants, based on auditing followed by basis the employed research methodology; preparing the analysis is done together with discussing the obtained results and finally presenting some concluding remarks.

3. Diachronically analysis of environmental auditing and reporting

Today we have a distinctive trend towards a compliance of environmental and social reporting following the guidelines provided by the Global Reporting Initiative (GRI). Tough this evolution is obvious in consequence we can identify a trend towards standardization, but we can barely recognize a harmony on the nature and the substance or form of environmental and social reporting or on environmental audit to be applied.

3.1. Analysis of environmental and social reporting

We can identify a change in the reporting practices of business in time and also a consequent change in used *terminology* as well as its nature and form. In the early stages of development 1970s and 1980s we have the relevant studies in this domain referring to this phenomenon simply as: social reporting (Bowman *et al.*, 1976; Heard *et al.*, 1981; Cowen *et al.*, 1987). Passing to the decade of 1990 we can found this phenomenon described mostly using the term: environmental reporting (Patten 1992; Stittle *et al.*, 1997; Lober *et al.*, 1997; Kolk 1999).

In the 2000s the paradigm has changed, shifting to the more complex and hopefully integrating phenomenon of corporate (social) responsibility (Parker, 2005; Hartman *et al.*, 2007; Darnall *et al.*, 2009; Fifka, 2012). As mentioned before we have studied the surveys conducted by KPMG in 1997, 1999,

2002, 2005, 2008 and 2011 so the shift in paradigm, consequently in terminology is obvious; for the research conducted in 1997, and 1999 we have a resulted title as: “International Survey of Environmental Reporting”; the one in 2002 makes a point on commenting the “Sustainability Reporting”, and the last ones cited are: “International Survey of Corporate Responsibility Reporting” for 2005, 2008, 2011 surveys.

According to the disclosure paradigm : “the reliability of environmental and social reporting related to the mandatory/voluntary disclosure character” there is a tough tendency by academic research to include only either only voluntary reporting in their empirical research, there are fewer studies that include also mandatory reports (Cunningham *et al.*, 2003). In 2001, Gray mentioned in his work that: “voluntary initiatives do not produce widespread, consistent and systematic practice. Only changes in organizational regulation can produce this.”

Starting as a specific remedy for particularities concerning the reporting model for environmental and social issues the paradigm of “environmental reporting and auditing” can be related to broad of other terms for the last ten years, such as: social reporting, (Secchi 2006), more complex: social and environmental reporting (Tagesson *et al.*, 2009) or simpler *environmental reporting* (Haddock-Fraser *et al.*, 2008).

Throughout the years, there have been a series of severe deliberations on the subject of the need to mention a more comprehensive “accounting” instead of “reporting” or “disclosure” starting in the early 1970 (Epstein *et al.*, 1976), through 1990s (Mathews 1997; Williams 1999) and all through the 2000s (Ferreira 2004), despite the fact that a delineation among accounting and reporting as different procedural steps.

The shift in terminology does not rest in the use of a certain term, but the definition is invariably changed not only in its form but in its substance also. In 1987 we can found defined *social and environmental accounting* as “the process of communicating the social and environmental effects of organizations’ economic actions to particular interest groups within society and to society at large” (Gray *et al.*, 1987), the same author fifteen years later shifted his perception Gray (2002,) and utilized *social accounting* as a generic term “to cover all forms of ‘accounts’ which go beyond the economic and for all the different labels under which it appears— social responsibility accounting, social audits, corporate social reporting, employee and employment reporting, stakeholder dialogue reporting as well as environmental accounting and reporting.” (Tagesson *et al.*, 2009) defined social disclosures as “reporting that considers environmental, ethical and human issues”, and (Schaltegger *et al.*, 2006) interpreted sustainability accounting similarly as “a broad umbrella term bringing together existing accounting methods dealing with environmental and social issues.”

Defining the environmental reporting we relay on the following definitions: “the process, whether voluntary or imposed by external regulations that leads to the production of document information related to the impact of the organization or company on the environment” (De Moor *et al.*, 2005). Another important definition is “reporting on environmental issues that usually goes beyond financial reporting and might take place in a separate report or in separate sections of the glossy brochure. Such reporting may include environmental balance sheets” (Collison *et al.*, 2000)

In our opinion it is obvious that the terminology used in this matter only reflect the shift in the paradigm, from a very narrow understanding of environmental and social reporting/auditing problems to a more comprehensive one, including the whole range of problems from human, capital, environmental (solitary, community, socially).

We can found all the way through the last 40 years, there have been a ***series of diachronically delineations on the subject of evolution*** in the *environmental and social reporting* in approach to the matters of providing information on the social impact of their business operations. In each of the variants, in our opinion the role of the “society need for the disclosure of information,” as a source for useful information from a decisional point of view cannot be disputed. The conceptual implications of this idea generate a wider opening towards the environmental and social reporting/auditing paradigm, which is especially simulated by the specific issues.

In an almost a unanimously manner the research studies mentions a four periods identically to the four decades since the appearance of this phenomenon (Kolk *et al.*, 2010, Fifka, 2012), and the early ones referring obviously to their studies periods (Mathews 1997, Gray 2002).

We can identify the **1970s** as the ***decade of the beginning***, the necessity (societal request) of information on the social impact of business operations especially in western society (Western European society) translated into a wide publication of separate “social balance”, “bilan social” or “Sozialbilanz”.

This need for public information comes along with the increase power of multinational organizations (Parnell, 2009) and the “environmental and social accounting /auditing research first became established as a substantial discipline in its own right” (Owen 2008).

A lot of respectable academics with important research in this domain attribute the non-development/stagnation of the phenomenon during the *1980s* to a social-political cause: the re-birth on neo-liberalism in two main countries (UK, USA) as the two main centers of research for environmental and social accounting/auditing (Gray, 2002, Owen 2008, Mathews 1997). A distinctive characteristic of the 1980 was more comprehensive and more methodological studies (Owen, 2008).

The *decade of the 1990s* is considered the “*heyday*” of research on environmental reporting. The importance that society gave to the environmental issues, the popularization of “eco-friendly” term, and the environmental friendliness of the production methods might convey major proportional advantages for companies especially in regard to image and reputation (Parnell et al, 2009; Owen, 2008) so the “environmental accounting and auditing issues ... the prime focus of attention” (Owen 2008).

Starting with *2000s* the environmental and social reporting by organizations widen, so we can observe a combination of environmental social reporting and moreover an added economic or financial aspect as well, following the three-pillar model of sustainability. Moreover, while in previous decades social and environmental disclosure had often been part of the regular annual report, businesses increasingly began to publish stand-alone sustainability or CSR reports (Prado-Lorenzo et al. 2009, Tagesson et al., 2009).

3.2. Analysis of environmental auditing

Related to the evolution of the environmental and social reporting the environmental auditing so in the '70s, in the United States (and not in Western Europe) were the first attempts to organize an environmental auditing, as support, supplier and "beneficiary" of the production activity of organizations. *Environmental auditing* developed for reasons of cutting the cost remedial and the penalties recognized in case of industrial accidents with impact on the environment and on humans (community), as well as a requirement to manage environmental impact and performance.

Green accounting which is the main supplier for accounting and financial information of environmental and social reporting, developed as concepts and practice in China and developed countries of Western Europe. In the US (as shown before) preoccupations for environmental and social reporting, consequently green accounting appears only in early 1990s, under the pressure imposed by external stakeholders interested in pollution prevention, they believed that managers will not act in this direction only if they find that financial and social benefits obtained outweigh environmental costs.

Conceptually, green accounting has acquired consistency in direct confrontation with user requirements foreground. If, initially, green accounting was recognized as a set of techniques to improve the information presented to the user, then this set of techniques adapted to improve environment management, and currently answers to sustainable development needs. It is dedicated to both external users through entity financial statements volunteer information on environment as well as to the internal management by producing useful information overall decision-making process, product, process, etc. Green accounting practice causes data collection to assess costs and natural risks, identifying externalities that should be recognized by the entity and developing sustainable development strategies to converge to (Bețianu L., 2008).

The International recognized Body (mentioned before) whose main objective is to promote publication of information on sustainable development is Global Reporting Initiative (GRI). It developed a conceptual accounting framework powerful marked by IASB and FASB influence, voluntarily adopted by organizations and based on principles of transparency, inclusion, and auditing the main areas concerned: economic, social and environmental. Transparency and inclusiveness consider identifying all stakeholders in reporting on these three dimensions and correct translation of information needs as a direct result in disclosure. Reliability and trust in the information thus provided is obtained by expressing a balanced reasonable opinion, provided in the auditing process.

Environmental audit has been promoted by multinational companies which have applied specific procedures both at the corporate level (vertically) and horizontally, to their subsidiaries from other countries, facing different rules and regulations depending on the policies implemented by different states who have created operational and functional structures in this matter. Along with the development of audit procedures and with the emergence of environmental and socio-economic crisis the environmental

audit widened vertically by requesting "green certification" to all business partners involved in the provision of goods and services incorporated the final products of the organization.

As shown before, globally, the environmental audit has become an important tool for creating competitive advantages for organizations that has this type of certification, evident through: identifying potential markets, internal and external stakeholders benefit sustainable earnings, financial savings, improved public image, etc.

Since the first employment, environmental audits at national, European and International level; acquired different and various shapes as: practices, procedures, objectives and targets, which are now found in the concept of environmental auditing as an independent concept, part of the newest approach to environmental auditing: an integrated audit system, Environmental Management System.

Environmental auditing was firstly defined by the Confederation of British Industry - CBI in 1990 as: "environmental audit is the systematic examination of the relationships of: processes, procedures and work environment of an entity". In a broad approach, this relationship includes emissions, legal restrictions on land use and water, effects on neighboring community, conservation and protection of natural landscapes, the principles of ecology, public perception of the entity in the local context etc.

Formally environmental auditing was conceptualized in 1991 by the International Chamber of Commerce (International Chamber of Commerce - ICC), as a "management tool that provides systematic documentation and evaluation of how the entity, equipment and technologies involved in its activity protects natural environment". Complementing the notional sphere, the European Economic Council (EEC, 1993) defines environmental audit as a "management tool consisting of systemic evaluation, documented, periodic and objective performance of the entity, management system and processes designed to protect the environment, in order practices to control environmental impact and to assess their conformity with the policies of the entity".

In 2005 Parker conducted a review of research on social and environmental responsibility in the period 1988-2003 published in recognized interdisciplinary accounting journals. He has been identified 233 articles on this subject, of which 66% applies only to environmental problems. Following this analysis, the researcher concluded that although academics recognize the responsibility to the environment as an important area of research, environmental audit is a field little studied and even less depth and implemented by entities as aspects associated with different practices and performance audit of the environmental impact

Darnall (2009), concluded that acceptance and understanding of these aspects are important for two main reasons, firstly: absence of legislative constraints on environmental audit and voluntary nature of the default application of auditing standards and practices of environmental impact and performance of direct or indirect influence of stakeholders; secondly: there are several options for implementing the environmental audit as a tool of management entity: only as internal audit, only as external audit, a combination of the two forms, total ignorance of environmental auditing and performance impact, option is incompatible with sustainable development of micro and macro, but manifested in many entities, including Romania

The International practice has described several types of *partial environmental audits*, undertaken by academic and professional bodies recognized in the field (ERM- Environmental Resources Management, 1996), which summarizes: *Compliance Audit*. the most common type of audit, which consists in verifying that the policies promoted by the entity comply to environmental legislation; *Object Audit*, described as an assessment of how the entity's activities respond to environmental problems (pollution, energy use, etc.) or as an appreciation of a particular matter in relation to the environment (location of buildings, purchase of resources, etc.); *Safety Audit* conducted for planning actions to be conducted under conditions of risk and / or force majeure recognizing the environmental impact of industrial processes and possible risk; *Placed Audit* headed for a particular aspect of the business entity in order to identify current and / or potential problems with environmental impact; *Corporate Audit*, considers the whole organization, with all policies, structures, procedures and practice them; *"Due diligence" Audit* is an audit "on demand", consisting of professional and authorized to express an opinion about the possible risks and financial burdens and environmental procedures manifested before a merger, acquisition or non-investment. A common situation used as an example of risk found in some studies of environmental due diligence is the acquisition of contaminated land which in order to be used for agriculture, requires remediation costs; *Operational Audit* to assess the operational activities of interest for several departments or units of an organization such as waste management, energy resource etc.; *Product Audit or product life cycle Audit* is the product's environmental impact analysis, along the

characteristic stages of its life cycle: design, production, use and withdrawal, including reuse and recycling.

The principle of audit integration makes all forms of audit described in the literature to be applied form an environmental approach. *External environmental audit* aims to evaluate environmental conditions at local, regional, national level and express opinions in a report on the environment. *Internal environmental audit* focuses mainly on two directions: A. The Impact assessment of policy promoted by the organization, through a systematic study of the activities, objectives, services, practices affecting the environment; B. Auditing the management system through a review of procedures and structures through which environmental policy is driven by the entity.

Nevertheless the distinctive form that an environmental auditing process takes, in wide-ranging there are two types on environmental audits: one focusing on the environmental compliance with different kind of regulation and the other on the Environmental Management System (EMS). The former audit is simply a check on how well companies comply with the environmental regulations, and the latter checks whether the company has a system to achieve and maintain compliance.

As shown before we have environmental compliance audits and system related environmental audits; the last one provides a skeleton to structure and develop environmental policy (Tucker et al. 1998) considers that the main advantage of an Environmental Management System is “to make sure that the management system ensures compliance in the future”. Due to the importance of such a system the ISO 14000 standards to provide international standards for Environmental Management Systems (EMS) and for Environmental Auditing and Environmental Performance Evaluation (EPE).

Gilbert and Gould (1998) refer to ISO 14011 to define an audit of the Environmental Management System as “a systematic process of objectively obtaining and evaluating evidence to determine the reliability of an assertion with regard to environmental aspects of activities, events and conditions as to how they measure to established criteria, and communicating the results to the client.”

An Environmental Management System can be formalized through ISO (International Organization for Standardization) or EMAS (Eco- Management and Audit Scheme) certification. Both systems are self-regulatory, with the state establishing institutional or organizational arrangements with the purpose of proactively directing and promoting environmentally friendly behavior (Oluoch-Wauna 2001).

In 1993, the EU Council adopted Decision no. 1836/93, for industrial entities that can join a volunteer Environmental Management System and environmental audit. In Europe, the model promoted by the judgment is known as the Eco-Management and Audit Scheme (EMAS), is accepted and practiced on a voluntary basis in line with expectations and stakeholder interests. Voluntary adoption of EMAS involves recognition and respect for the entire set of provisions, as the only guarantee of reliable and rigorous approach to environmental management.

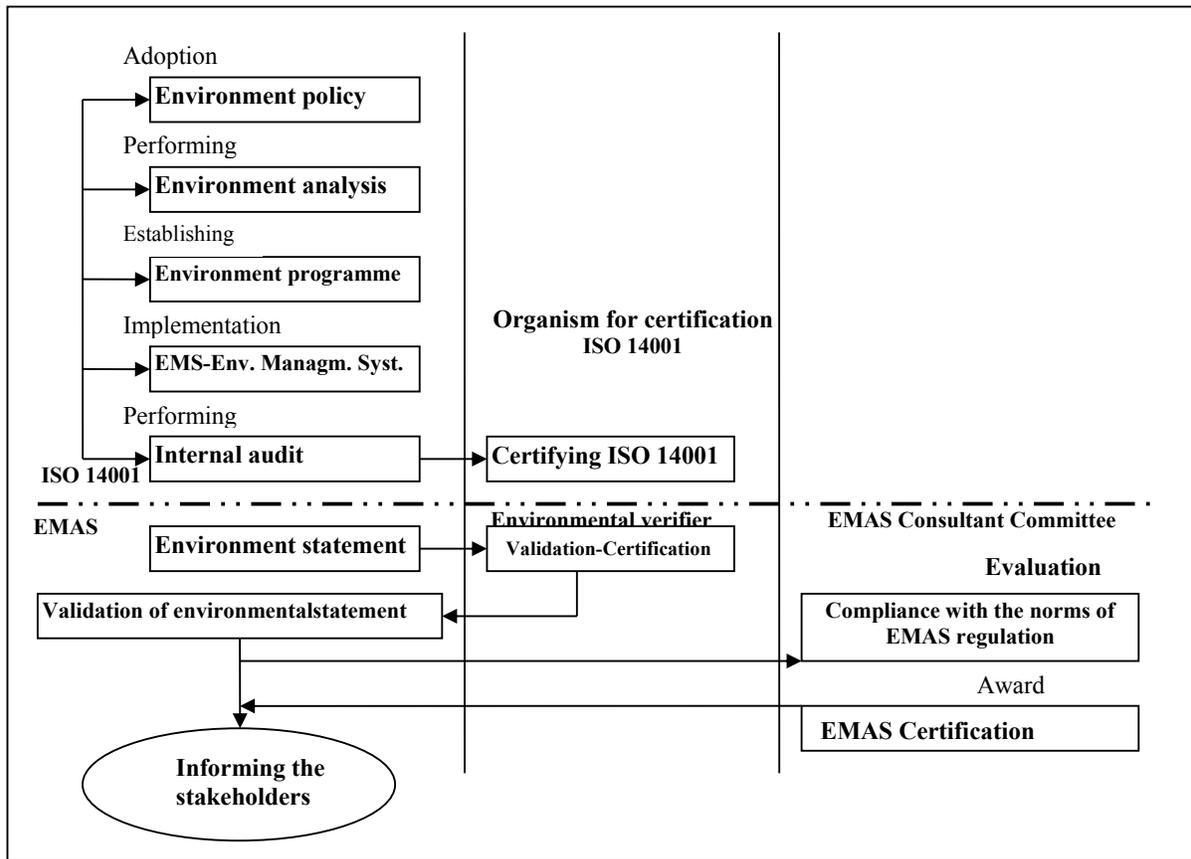
Summarizing the main features of EMAS are: Represent the European legislation with specific requirements; mandatory requirement for external financial audit; requires mandatory publication of the audit report and the results indicated the audit of implementation measures, to inform stakeholders; works under the express requirement of compliance with legislation; the focus is continuous improvement of environmental impact and performance.

Although the world-wide recognized standard (ISO) and the European Eco-Management and Audit Scheme (EMAS) are convergent there are aspects of approach and detail that distinguish them. Firstly, an important difference between both arrangements from the application area point of view is that EMAS certification is applicable only in Europe, but ISO standard is applicable world-wide. Secondly from the point of view of initial request to be fulfilled: ISO does not request an initial analysis of the environmental impact, but EMAS does to. Thirdly from the targeted performance point of view the ISO searches a continuous improvement of Environmental Management System reflected in performance, but the EMAS aims to improve performance through best available techniques. And finally from the mandatory disclosure of environmental reporting and environmental auditing results, EMAS requires mandatory public environmental statement, with direct visibility on environmental policy and programs; while ISO only suggest external communication without formal requirements, but requires public access to environmental policies (www.srac.ro).

To obtain a certification under EMAS, a verifier has to perform an independent analysis to confirm that the Environmental Management System is operating and produces the necessary and reliable information (Langford 1995). Originally, the EMAS was only applicable in companies performing industrial activities. Currently, any type of company can apply for a registration (EMAS 2004).

A summarized scheme to obtain a ISO/EMAS certification is presented in figure 2.

Figure 2: Flow of activities for ISO 14001/EMAS certification



Source: <http://www.srac.ro>

In the last ten years, over 88.000 organizations worldwide have aligned their Environmental Management Systems to ISO 14001 international environmental standard, which provides external environmental audit as a condition of certification activity. Extending this, many entities have implemented internal audit and currently uses both auditing systems (Ivan et al., 2011).

The Eco-management and audit schema (EMAS) is an European Community’s strategy to support sustainable development all over the EU. It stimulates the organizations’ transparency and performance and it mandates to publish a series of information related to the Environmental Management Systems, the labor conditions, management of wastes, pollution and human resources. A study made for DG Environment of the European Commission reveals the main reasons of EMAS adoption by organizations: increasing the resource/production efficiency, transparency for stakeholders, greener products, employees’ participation (Vernon et al., 2009).

In 2009 the EMAS Regulation was revised and modified for the second time leading to the EMAS III Regulation. Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organizations in a Community eco-management and audit scheme (EMAS) was published on 22 December 2009 and entered into force on 11 January 2010.

In December 2011 in EU there are 4.566 registered organizations with EMAS compliance and 8.278 sites. The largest number of organizations registered with EMAS can be found in Germany 1.349, how leads the way with 29,44%, followed closely by Spain with 27,06% , and 1.236 organizations registered, and thirdly Italy with 1.177 and a 25,77% from the UE’s organizations registered. In December 2011, Romania has only 4 organizations and 6 sites registered with EMAS a 0,08% of total according to the Official Newsletter, issue December 2011 of EMAS (<http://ec.europa.eu/environment/emas/pdf/newsletter/newsletter%20122011.pdf>).

The environmental auditing process carry out the collection, confrontation, analysis, interpretation and presentation of information necessary for: (1) assessing the performance requirements and objectives set the context for a particular issue; (2) assessment of compliance with environmental legislation and policy entity and (3) measure performance in accordance with the requirements of environmental management standards. To this end, the environmental audit is organized in terms of well-identified circumstances, adapted entity size, appropriate activities and corporate culture.

Thus the environmental audit scope and technique varies from the financial audit they have the same structure and can be generally identified the main steps but with different activities available. Firstly *Preparing the audit* with the main activities: Full commitment of the managements' entity; Setting main objectives, general goals and environmental priorities to be audited; Choice of team members in order to ensure objectivity and professional competence of mission. Secondly: *The audit itself or the main part of the process*: On-site phase of the environmental audit, with the correct and systematic protocols and priorities compliance; Checking (compiling the check-lists) of documents, journals and accounts; Review of accounting and reporting policies Discussions, interviews, questionnaires; Inspections; and the final step: Evaluating the assessment of findings and results; Reporting the recommendations; Preparation of action plan for the future; Follow-up for the implementation of mitigation and improvement measures.

Geographical delineation it is easy to be mad at first, EMAS being a European Regulation it is applied only in Europe and not in a homogeneous manner; world wide applied regulation is ISO 14001.

The EMAS is not mandatory by law for individual's organizations to audit its reporting according, but once an organization decides to implement EMAS, compliance with all applicable environmental regulations becomes mandatory. According to the study published by Wenk in 2005 on 25 member states of EU, these applied different types of stimulations so there are countries that provides some financial support (up to 50% of the initial cost) to organizations that what to implement EMAS (UK, France), some other countries does not offer financial support for implementation but offers some "formal" and "informal" benefits (The Netherlands) such as: tax reduction, granting or not some types of license; labeling the organizations as "Ecodynamic Enterprise (EE)" with three steps for compiling with EMAS (Belgium); up to the widely perceived to be the one of most environmentally progressive states in Europe, Germany, "with a more stringent regulatory system and a far greater public awareness of environmental issues" (Wenk, 2005). Since 2004 officially Germany is the only country in the EU with EMAS participation higher than ISO 14001, and the Federal States (districts) are responsible for providing financial support fro EMAS involvement. As of 2000 at least 30% of all EMAS organizations received some type of financial support, averaging about 19.400 euros (Steger at al., 2002).

About the environmental reporting, in some countries from EU we can find imposed environmental reporting: Spain, Denmark, The Netherlands, Norway, and Sweden (Larrinaga *et al.*, 2002). The Danish type of report is similar to an eco-balance sheet. In Spain, companies are obliged to disclose environmental information in the notes attached to financial statements. In consequence, it is audited as part of the financial audit process. We don't have an environmental auditor in this respect, so it is not clear how these data are in fact audited and how traditional auditing concepts such as materiality apply in this context (de Moore *et al.*, 2004).

4. Conclusions

While EMAS and ISO/EN ISO 14001 share the same objective, they are different in a number of ways. These differences are very important in the Corporate Responsibility/ Social Responsibility reporting. About the *status*: EMAS are under legal bases (EU Member States and EEA countries), regulation of the European Parliament and the Council under public law; and ISO are under no legal bases.(International: world wide) ISO standard under private law. Another important element is **environmental Policy**: EMAS -Included commitment to continual improvement of environmental performance of the organization, ISO -does not include a commitment to the continual improvement of environmental performance but of the performance of the system; in what the very important issues of **environmental aspects** are concerned EMAS searches the identification and evaluation of the environmental aspects (direct and indirect) tries the establishment of criteria for assessing the significance of the environmental aspects, contrary to the ISO whom requires only a procedure able to identify environmental aspects; about the **internal environmental auditing process** the EMAS requires: a system-audit, a performance-audit and an environmental compliance-audit, but ISO only includes system audit against the requirements of the standard. The last issue mentioned is **public communication**: EMAS includes open dialogue with the public, Environmental Statement (validated for verifiers) made

public; but the ISO it does not provide an open dialogue with the public, it only requires to respond to relevant communication from external interested parts and the control by public is not possible.

It seems right to conclude on all of these researches revised regarding the environmental auditing issues put accent on the role they play in the process of Corporate Social Responsibility; they contribute to identify various aspects that derive from the reporting environmental issues to the public at the structuring of these aspects to the obtainment of useful information. Researchers concerned with the environmental auditing process (either EMAS or ISO), are authors of impartial analytical works that have evolved along the concept in the last 20-30 years. Environmental reporting is a key topic on which the auditing research literature can bring its contribution, the truth being that this concept affects a series of major projects such those relating to quality of life, social issues related to the social responsibility of an organization.

5. References:

- Bețianu L. (2008), *Calitate totală în contabilitatea mediului*, Editura Universitatea Alenxadru Ioana Cuza, Iași;
- Bowman E.H.; Haire M. (1976) Social impact disclosure and corporate annual reports. *Journal of Accounting Organizations and Society*, 1(1) p.11–21.
- Brown, L. (1996), *Probleme globale ale omenirii*, Editura Tehnică, București;
- Cowen S.S.; Ferreri L.B.; Parker L.D. (1987) The impact of corporate characteristics on social responsibility disclosure: a typology and frequency-based analysis. *Journal of Accounting Organizations and Society*, 12(2), p. 111–122
- Daly, H. (1996), *Beyond Growth: the Economics of Sustainable Development*, Beacon Press, Boston;
- Darnall N., Seol I., Sarkis J. (2009) Perceived stakeholder influences and organizations' use of environmental audits. *Journal of Accounting Organizations and Society* 34(2), p.170-187;
- Ekins, P. (2000), *Economic Growth and Environmental Sustainability: the Prospects for Green Growth*, Routledge, London, New York;
- Epstein M., Flamholtz E., McDonough J.J., (1976) Corporate social accounting in the USA: state of the art and future prospects, *Journal of Accounting Organizations and Society*, 1(1), p.23–42;
- Fifka M., (2012), The development of research on social and environmental reporting, *Journal für Betriebswirtschaft*, 62 (1), p. 45-73;
- Gray R. (2002), The social accounting project and accounting, organizations and society: privileging engagement, imaginings, new accountings and pragmatism over critique?, *Journal of Accounting Organizations and Society*, 27(7), p.687–708;
- Haddock-Fraser J., Fraser I. (2008) Assessing corporate environmental reporting motivations: differences between 'close-to-market' and 'business-to-business' companies, *Journal of Corporate Social Responsibility and Environmental Management* 15(3), p.140–155
- Heard J.E.; Bolce W.J. (1981) The political significance of corporate social reporting in the United States of America. *Journal of Accounting Organizations and Society*, 6(3) p. 247–254.
- Kolk A. (1999) Evaluating corporate environmental reporting *Business Strategy and Environment* 8(4) p. 225–237;
- Larrinaga, C., Carrasco, C., Correa, C. Llena, F., Moneva J.,(2002) Accountability and accounting regulation: The case of the Spanish environmental disclosure standard, *The European Accounting Review* 11 (4), p.723–740;
- Lober D., Bynum J.D., Campbell E., Jacques M. (1997) The 100 plus corporate environmental report study: a survey of an evolving environmental management tool. *Journal of Business Strategy and Environment* 6(2) p. 57–73;
- Lutz, E. (editor) (1993), *Toward Improved Accounting for the Environment*, an UNSTAT – World Bank Symposium, the World Bank, Washington D.C.;
- Mathews M.R.,(1997), Twenty-five years of social and environmental accounting research. Is there a silver jubilee to celebrate? *Accounting, Auditing&Accountability Journal*, 10(4), p.481–531;
- Oluoch-Wauna, L.O. (2001), *EMAS and ISO 14001: A comparison*, *Journal of Environmental Policy and Law* 31(4), p.237–249;

- Owen D. (2008); Chronicles of wasted time? A personal reflection on the current state of, and future prospects for, social and environmental accounting research, *Journal of Accounting Organizations and Society*, 21(2), p.240–267;
- Parker L.D. (2005) Social and environmental accountability research: a view from the commentary box. *Accounting, Auditing&Accountability Journal*, 18(6), p.842–860;
- Patten D.M.; (1992) Intra-industry environmental disclosures in response to the Alaskan oil spill: a note on legitimacy theory. *Journal of Accounting Organizations and Society*, 15(5), p. 471–475;
- Prado-Lorenzo J.M., Gallego-Alvarez I., Garcia-Sanchez I.M., (2009), Stakeholder engagement and corporate social responsibility reporting: the ownership structure effect, *Journal of Corporate Social Responsibility and Environmental Management*, 16(2), p.94–107;
- Secchi D., (2006), The Italian experience in social reporting: an empirical analysis, *Corporate Social Responsibility and Environmental Management*, 13 (3), p.135–149;
- Stittle J., Machota Blas M., Martinez Conesa I. (1997) Environmental reporting in Europe: an analysis of UK and Spanish developments, *European Business Review* 97(5), p.215–223;
- Tagesson T., Blank V., Broberg P., Collin S.O. (2009) What explains the extent and content of social and environmental disclosures on corporate websites: a study of social and environmental reporting in Swedish listed corporations. *Corporate Social Responsibility and Environmental Management*, 16(2), p.352–364;
- Wenk M., (2005), The European Union's Eco-Management and Audit Scheme (EMAS), (e-book) Springer Dordrecht, Berlin, Heidelberg, New-York, Springer, The Netherlands;
- KPMG (1997) International survey of environmental reporting 1996;
- KPMG/WIMM (1999), International survey of environmental reporting 1999;
- KPMG (2002) International survey of sustainability reporting 2002;
- KPMG (2005) International survey of corporate responsibility reporting 2005;
- KPMG (2008) International survey of corporate responsibility reporting 2008;
- KPMG (2011) International survey of corporate responsibility reporting 2011;
- <http://www.kpmg.com>
- <http://www.srac.ro>

THE STRATEGIC ALIGNMENT BETWEEN KNOWLEDGE STRATEGY AND INFORMATION SYSTEM STRATEGY IN THE BANKING SECTOR

JUCAN Cornel Nicolae

Ph. D. Associate professor, Faculty of Economics, Lucian Blaga University of Sibiu, Sibiu, Romania, cnjucan@yahoo.com

DOLF BAIER Mihaela Sabina

Master student, Faculty of Economics, Lucian Blaga University of Sibiu, Sibiu, Romania, jucanella@yahoo.com

Abstract: *A modern organization should develop a holistic approach for knowledge management that embraces business strategy, information system strategy, organization culture and human factors. This research will investigate the strategic alignment between the knowledge strategy and the information system strategy in the banking sector, exploring the impact on the organizational performance.*

Knowledge is the most important resource in an organization and connecting this resource with the information system strategy will have an important impact on the organization performance. The use and application of knowledge now represents a key source for sustained competitive advantage (Drucker, 1993; Quinn, 1992b; Reich, 1991) The research will argue that knowledge management is the primary determinant of the effectiveness of information system in the organization. To achieve performance the bank system has to put in the forefront the knowledge management.

Key words: knowledge, alignment, information, banking, strategy

JEL classification: M 15, L 25, O 33

1. The importance of knowledge management for the organizational performance

The use and application of knowledge now represents a key source for sustained competitive advantage (Drucker, 1993; Quinn, 1992; Reich, 1991)

Knowledge management is defined as “a process that drives innovation by capitalizing on organizational intellect and experience” (Duffy, 1999). King (2007) defined knowledge management as „the planning, organizing, motivating and controlling of people, processes and systematic in the organization to ensure that its knowledge-related assets are continuously improved and effectively employed”. KPMG Consulting (1998), noted that: There is little doubt that we have entered the knowledge economy where what organisations know is becoming more important than the traditional sources of economic power. In the same analysis, KPMG Consulting established some core knowledge management objectives:

- supporting innovation, the generation of new ideas and the exploitation of the organisation’s thinking power;
- capturing insight and experience to make them available and usable when, where, and by whom required;
- making it easy to find and reuse sources of know-how and expertise, whether they are recorded in a physical form or held in someone’s mind (tacit knowledge);
- fostering collaboration, knowledge sharing, continual learning and improvement;
- improving the quality of decision-making and other intelligent tasks; and
- understanding the value and contribution of intellectual assets and increasing their worth, effectiveness and exploitation.

Knowledge management is intended to promote and support the creation of new knowledge, thus contributing to innovation, an essential ingredient in banking success. In this area, knowledge management is a very important aspect from many points of view:

- to improve the banks efficiency, and to meet international banking standards becoming Knowledge Management – based – banks
- to retain the expert bankers knowledge to the banks database
- to improve information-handling capacity
- to manage their daily operations in terms of capturing the large amount of information flows generated by the employees, customers and suppliers of the banks at all levels
- to capture informations and to make them available and usable when, where and by whom

required

- to improve the customer relationship and management
- to enhance employees' development and satisfaction; employees will spend less time looking for information and expertise; to increase workers productivity and performance and to improve the skills
- to create new value through new services (innovations)
- to enhance current value of existing services (knowledge about customers)
- better customer handling
- to reduce/avoid costs/promote reuse (knowledge about processes)
- to reduce uncertainty/increase speed of response (knowledge about the environment)
- to foster collaboration, knowledge sharing, continual learning and improvement

Hafizi (2006) described the knowledge management progress as follows: the environment forces an organization to maintain its competitive advantage by managing knowledge well or to distribute its knowledge among its geographically dispersed human resources. This may determine the organization to initiate a knowledge management program. "Through a combination of people and technology, information and energy are transformed into knowledge progress and structures that produce products and services. There are mainly three components in the knowledge progress. They are knowledge creation, knowledge retention and knowledge sharing".

Also, the literature describes a classification of the organizational knowledge, as follows:

→ **explicit knowledge** is considered to be formal and objective, and can be expressed unambiguously in words, numbers and specifications. It can be transferred via formal and systematic methods in the form of official statements, rules and procedures and so is easy to codify.

→ **tacit knowledge**, by contrast, is subjective, situational and intimately tied to the knower's experience. Thus, it is difficult to formalise, document and communicate to others.

These categories are interlinked hence to understand completely a written document (explicit knowledge) often requires a great deal of experience (tacit knowledge).

The knowledge management processes consist of:

- identification of knowledge needs
- discovery of existing knowledge
- acquisition of knowledge
- creation of new knowledge
- storage and organisation of knowledge
- sharing of knowledge
- use and application of knowledge

Zack (1999a) stated that: "the most important context for guiding knowledge management is the firm's strategy. Knowledge is the fundamental basis of competition. Competing successfully on knowledge requires either aligning strategy to what the organisation knows, or developing the knowledge and capabilities needed to support a desired strategy".

▪ **The alignment between knowledge strategy and information system/information technology (IT/IS) strategy**

The alignment between knowledge strategy and IT/IS strategy represents the extent to which these dimensions meet theoretical norms of mutual coherence.

Organizations may not be able to adjust their alignment patterns to accommodate environmental changes, due to two major reasons. First, an overemphasis on alignment could constrict the organization's outlook, inhibiting the recognition of alternative perspectives and reducing the ability to 'recognize and respond to the need for change' (Miller, 1996, p. 510). The second reason focuses on complacency and inertia. Alignment facilitates short-term success, which leads to inertia, and the inertia in turn leads to failure when the market conditions shift suddenly (Tushman and O'Reilly, 1996). Therefore, when organizations with a high level of alignment face sudden changes in environmental conditions, they may find it necessary to make revolutionary changes (Greenwood and Hinings, 1996). These changes have to be updated permanently, because the same alignment pattern may not be effective over extended periods.

A successful strategic alignment is unlikely without advanced communication systems as such systems enable organisations to share the required real-time information between each other. The interlinking of organisational relationships across banking is resulting in complex alliance webs in which

one organisation can serve simultaneously as a supplier, competitor, customer, and consultant. The result is a circular value chain and new forms of interdependence (Fulk and Desanctis, 1995).

Information system (IS) strategy focuses on systems or business application of information technology (IT) and is concerned primarily with aligning the application with business needs and using them to derive strategic benefits (Earl, 1989). IS strategy consists in aligning IS development with business needs and with seeking strategic advantages from IT.

IT strategy is concerned with the technological infrastructure including such aspects as policies, architecture, standards and security levels, which are essential to meet the requirements of the IS (Earl, 1989).

The role of IT in knowledge management is vital for any company wishing to exploit emerging technologies to manage their knowledge assets (Egbu and Botterill, 2002). IT needs to support access to and update of information and supply the collaboration, communication and networking capabilities required for broad based knowledge capture, structure and distribution (Al-Ammary, 2008).

In order for an organisation to achieve significant value from IT investment, managers have to ensure a clear connection between business goals and the IT strategies that support them.

The bank system manage huge data flows, from the information about clients to a great number of financial organisations, facing problems of customer relationship, reason why banks are introducing knowledge management solutions like: customer relationship management, content management systems, corporate and knowledge portals and others.

The rapidly changing environment forces bank officers to be aware of new products and services, to exchange and analyze the various pieces of information and to support the changing needs of businesses. This becomes impossible without the knowledge management technology. Bank knowledge management requires collaboration between human capital and IT in order to increase profitability, output, social responsibility, technological efficiency and to develop personal skills.

Knowledge management has to ensure conditions for collection, search, use, reprocessing and dissemination of knowledge by branches and offices in order to solve business tasks. The dissemination can be done by forums, chats, corporate blogs, “knowledge packets”, communities of practice, resource catalogues, etc.

IS can support the knowledge strategy to obtain performance in many ways. Sabherwal and Chan (2001) have mapped six strategic orientations: defensiveness, proactiveness, risk aversion, aggressiveness, analysis and futurity.

To obtain performance, the banking system can use an aggressive knowledge strategy. For this purpose the IS support:

- bank's aggressiveness: introducing efficient ways to promote IS product innovation (Ragu-Nathan et al, 2001)
- bank's pro-activeness: understanding the internal and external environment (Morgan et al, 2003)
- bank's analysis: offering detailed analysis of the present situation and of the business decisions, generating the best alternatives.
- The banks can obtain performance also using a conservative knowledge strategy. In this scenario, the IS support:
 - bank's defensiveness: maximizing the efficiency of the business operations
 - bank's futurity: tracking significant future trends in IT
 - bank's risk aversion: offering strategic details about the current situation and support for their conservative decision making and minimize the business risk (Chan et al, 2001)

The use of information technology (IT) in managing knowledge has given knowledge management a new dimension. After automating and centralizing core customer information, many banks are taking the next step and installing overlay applications to analyze the reams of data that they've managed to digitize. Providing desktop access to the information gives senior management, financial advisors and customer service representatives descriptive, electronic views of historical transactional and general account data.

Much literature has also emphasized the effect of strategic alignment on organizational performance. Chan et al. (1997) states that “Companies that appear to perform best are companies in which there is alignment between realized business strategy and realized information systems strategy”. Luftman and Brier (1999) similarly declares, “Companies that have achieved alignment can build a strategic competitive advantage that will provide them with increased visibility, efficiency, and profitability to compete in today's changing markets”.

An excellent strategic alignment of business strategy and information systems strategy will lead the information system to a crucial point, which eventually boosts business performance (Hirschheim and Sabherwal 2001).

3. IT/IS support for knowledge management in the banking sector

Beugre et al (2006) believes that the volatility of the external environment influences how organisations restructure themselves to cope with changes or to anticipate them. Advances in IT cloud influence the socioeconomic system and facilitate the evolution to new organizational forms (Abareshi et al, 2011).

IT, however, not only has the potential to change the way an organization works but also the very nature of its business.

The rapid change in IT causes an already uncertain business environment to be even more unpredictable. Organizations' ability to identify the relevant information needed to make important decisions is crucial, since the access to data used to generate information for decision making is no longer restricted by the manual systems of the organization. IT can record, synthesize, analyze and disseminate information quicker than at any other time in history. Data can be collected from different parts of the company and its external environment and brought together to provide relevant, timely, concise and precise information at all levels of the organization to help it become more efficient, effective and competitive.

The variety of IT/IS solutions available on the market that support the complexity of knowledge management initiatives represent a challenging task in deciding what type of solution can lead to a competitive advantage. Bloodgood and Salisbury (2001) have assessed the degree of fit between IT and the various types of strategic changes and knowledge strategies. They argued that certain uses of IT may be more common for certain types of strategic changes. They added that any mismatching between IT and the knowledge strategy pursued by the organization could affect the effectiveness of knowledge management and therefore the overall organization performance. In order to address the challenge of the continuous changes in IT, IS strategy and knowledge strategy need to be associated to support the business goals of organization and enhance organizational performance.

Information system-based applications are capable of providing competitive advantage based on generic strategies such as cost leadership, product differentiation, and market focus (Porter 1980; Sethi and King 1994). On the retail level, for instance, the effect of ICT can be seen in electronic banking (e-banking) and in the implementation and increasing performance of information processing (Vives 2001).

The strategic construct of information technology/systems is based on the model developed by Henderson and Venkatraman (1993):

- IT/IS strategic role perceptions, measured by the top management's commitment level on implementation and IT/IS resource utilization.
- IT/IS competence in building unique comparative advantage of the company
- IT/IS choice which will determine cooperative relationships with strategic partners through a linkage built by IT/IS tools and networks architecture
- IT/IS work process choices in facilitating intracompany and inter-companies work processes (Kalika et al. 2003)

Organizational performance is evaluated with the following criteria (Kalika et al. 2003):

- Productivity, based on IT/IS influence towards the company members' productivity
- Cost reduction, which is the saving attained based on IT/IS usage
- Value-added innovation ability through the use of IT/IS
- Company's ability to respond to and use existing business opportunities
- Response to customer needs, whether IT/IS can guarantee better understanding and fulfillment of customer expectations
- Collaborations with business partners through the progression of the company's relationships with strategic partners from rivalry to cooperation.

Johnson and Lederer (2006) confirmed in a study that CEO/CIO convergence about the role of IT predicted IT strategic alignment for the aggressiveness, analysis, and innovativeness dimensions.

According to Bocij et al (Bocij, 2012) there are five main key management challenges in building and using Information Systems:

- designing systems that are competitive and efficient.
- understanding the system requirements of the global business environment.
- creating an information architecture and IT infrastructure that supports the organisations goals.

- determining the business value of Information Systems
- designing systems that people can control, understand, and use in a socially and ethically responsible manner.

Paul Lickert, in the same publication (Bocij et al) refers to seven modern management imperatives as the seven R's. These requirements show how the organisation must compete by using Information Systems strategy to respond to its external environment.

1. Reach – IS/IT both allow global competition and is required to compete; organisations need information and the tools to process it to allow quick, accurate response, anytime and anywhere; global competition implies information networks and inter-organisational systems

2. Reaction – IS/IT is needed to access and interpret customer feedback. It can be used to keep track of customers, products and projects – it is particularly important to bring order to data to facilitate fast and accurate response so that managers will be able to anticipate customer needs to be flexible and quickly developed.

3. Responsiveness – there needs to be a rapid movement of product ideas to the market. Organisations need IS/IT to help manage this process: efficiency and speed as well as accuracy and reliability are required and information needs to be relevant and well formatted.

4. Refinement – More customer sophistication means increased turbulence in the market, so more information and the tools to manage and manipulate it are needed. Customers are better at communicating precise requirements, which means that niche markets appear, grow and disappear rapidly. As a result increased breadth of information is required to create and market products. Also, customers respond well to systems that respond well to them.

5. Reconfiguration – As business processes need to evolve and adapt to market needs, there is a big impact on information resource requirements needed for organisational learning. Complex work structures generate complex data, and management support systems are needed to help manage continually evolving work patterns and structures. Also new architectures allow decentralisation of IS/IT and greater customer responsiveness.

6. Redeployment – Rapid redeployment of resources is required to meet the customer's needs. An Organisation needs to be able to visualise complex arrangements for resources and models to manage them. Therefore, it is necessary to maintain detailed, relevant information on resources at all times and be able to redeploy them. Information itself has become a competitive resource, as well as allowing more control over other resources.

7. Reputation – IS/IT can be used to support product development, testing, marketing and customer post-sale service. It can also help to reduce the gap between expectation and performance. Organisations need to enhance the quality and reliability of the product, and the Information Systems can help in such areas as quality benchmarks, measurement and group-based control techniques.

The strategic asset of having a desire for knowledge in the business sector is, according to Nonaka et al (1998), always actual. Adopting informal forms of collaboration between employees, representing a good opportunity to change the implicit form of knowledge to the explicit one, due to the fact that relationships are characterized by the informality (Miles, Snow, 1986) and to the trust climate that arises (Brass, 1995) is very important and the banks are aware of it. Thus banks have to create collaboration and interaction spaces and must use in the persuasion of the people in sharing their knowledge fair mechanisms, so that people don't feel like facing an opportunistic behavior. According to Wegner (1987) the social networks (characterized by interaction, for instance informal teams of practice) could enable the increase in the knowledge sharing level through its informal characteristic. Nonaka and Takeuchi (1995) highlight the relevancy for creating knowledge through technological networks because through the networks people are enabled in cheap and time saving way to share their ideas and know-how. By members connections the demand and offer of knowledge can be facilitated.

One of the most critical factors in the success of knowledge management systems could be the culture. In the banking system the culture is very much represented by the bureaucracy. Very often people embrace towards their colleagues an attitude of not being their knowledge or if something haven't been invented there. Drucker (1993) considers the knowledge and the information as a competition source implied by a cultural change. March (1997) describes the cultural change as being required in the process of making people share their knowledge, explaining it as an important part in understanding the advantages of a project. The standard attitudes that a bank personnel should adopt are practices like cooperation, teamwork, sharing activities and networks. Another factor needed for the success of a bank is a strong management leadership (Davenport et al., 1998).

If the organizational dimension isn't enough interrelated to the technological dimension and the cultural change in the direction of reciprocal trust and respect is missing, the investment in adequate technology of support is meaningless and useless. If people aren't motivated to share their knowledge, the technology by itself can't create new organizational knowledge. The banking industry should try to work on a better integration of the people, process and technologies.

4. Conclusions

Banks are moving from an information management towards a knowledge management supported by technologies. Information management focuses on an efficient use of information, which need to be controlled, classified and distributed inside the organization thanks to IT. Knowledge management focuses on people, giving attention and valorizing every human resource, focusing on collaboration and inter-individual relationship. Knowledge management uses technologies to make possible and easier the meeting between who need a particular kind of knowledge and who owns it (Bair, Stear, 1997).

Banks that have achieved alignment between knowledge strategy and IT/IS strategy can build a strategic competitive advantage that will provide them with increased visibility, efficiency, and profitability to compete in today's changing markets.

The activity regarding IS/IT will continue in many directions, driven by fashion and market forces, by organizational need and technical opportunity. However, it appears that the application of knowledge management and information technology is at the threshold of a new era, opening up new opportunities by using the technology strategically for the benefit of organizations and businesses.

5. References

- Abareshi, A, Martin, B, Molla. A, (2011), ICTS – new organisational form linkage in the Australian context: theoretical model and research instrument, *Journal of Information Systems and Technology Management*, Sept./Dec. 2011
- Al-Ammary, J, H, (2008), *Knowledge Management strategic alignment in the banking sector at the Gulf Cooperation Council (GCC) countries*, available on <http://researchrepository.murdoch.edu.au/433/2/02Whole.pdf>
- Bair, J, Stear, E, (1997), *Information Management is not Knowledge Management*, Gartner Group Paper, December
- Beugre, C, D, Acar, W, Braun, W, (2006), Transformational leadership in organisations: an environment-induced model, *International Journal of Manpower*, 27(1)
- Bloodgood, J, M, Salisbury, W, D, (2001), *Understanding the influence of organisational change strategies on information technology and Knowledge management strategies*, Decision Support Systems, Vol. 31
- Bocij, P, Chaffey, D, Greasley, A, Hickie, S, (2012) *Business Information Systems*, available on <http://www.freeonlineresearchpapers.com/jp-morgan-chase-business-case>
- Brass, D, J, (1995), A Social Network Perspective on Human resources Management, *Research in Personnel and Human Resources Management*, 13
- Chan, Y, E, Huff, S, L, Barclay, D,W, Copeland, D, G, (1997), Business strategic orientation, information systems, strategic orientation, and strategic alignment, *Information Systems Research* 8 (2)
- Chan, Y, E, (2001), *Information system strategy, structure and alignment, in Strategic information technology: opportunities for competitive advantage*, IDEA Group Publishing, USA
- Drucker, P. (1993), *Post-Capitalist Society*, Harper Collins, New York, NY.
- Duffy, J. (1999), *Harvesting Experience: Reaping the Benefits of Knowledge*, Prairie Village, KS: ARMA International.
- Earl, M.J., Scott, I.A. (1999), What Is A Chief Knowledge Officer? *Sloan Management Review*, Vol. 40, No. 2; pp. 29-38.
- Earl, M, J, (1989), *Management strategies for information technology*, Prentice Hall, London
- Egbu, C, O, Botterill, K, (2002), *Information technologies for Knowledge Management: their usage and effectiveness*, ITcon, vol. 7, Special Issue ICT for Knowledge Management in Construction
- Fulk, J, Desanctis, G, (1995), *Electronic communication and changing organisational forms*, Organization science, 6(4)
- Gemmo, V, Rajola, F, Santuccio, A, (2005), *Technology and organisational settings in*

- Knowledge networks: an empirical research in the banking industry*, Proceedings of the 13th European Conference on Information Systems, Information Systems in a Rapidly Changing Economy, ECIS 2005, Regensburg, Germany, May 26-28, 2005
- Greenwood, R., C. R. Hinings, 1996. Understanding radical organizational change: Bringing together the old and the new institutionalism. *Acad. Management Rev.* 21(4)
 - Hafizi, M, A, Nor Hayati, A, 2006, Knowledge management in Malaysian banks: a new paradigm, *Journal of Knowledge Management Practice*, Vol. 7, No. 3, September 2006, available at <http://www.tlinc.com/articl120.htm>
 - Henderson, J, C, Venkatraman, N, (1993), Strategic alignment: Leveraging information technology for transforming organizations, *IBM Systems Journal* 32 (1)
 - Hirschheim, R, Sabherwal, R, (2001), Detours in the path towards strategic information systems alignment, *California Management Review*, 44 (1) (Fall)
 - Johnson, A, Lederer, A, (2006), The Impact of CEO/CIO Convergence on IT Strategic Alignment, in *Emerging Trends and Challenges in Information Technology Management*, Volume 1 and Volume 2 edited by Mehdi Khosrow-Pour © 2006, Idea Group Inc., available on <http://www.irma-international.org/viewtitle/32708/>
 - Kalika, M., Ledru, M, Isaac, H, Beyou, C, Josserand, E, (2003), *Le E-Management: Quelles Transformations Pour L'entreprise?* Editions Liaisons.
 - King, R., (2007), Knowledge Management, A systems perspective, *International Journal of Business Systems and Research*, Vol.1, No.1, pp. 5-28.
 - KPMG Consulting (1998) *Knowledge Management Research Report 1998*, available at: www.kpmg.interact.nl/publication/kmsurvey.shtml
 - Luftman, J, N, Brier, T, (1999), Achieving and Sustaining Business-IT Alignment, *California Management Review* 42 (1)
 - March, A, (1997), *A Note on Knowledge Management*, Harvard Business School Davenport T.H.
 - Miles, R., Snow, C., (1978), *Organizational strategy, structure and process*, McGraw-Hill New York, USA
 - Miles, R, Snow, C, (1986), Organizations: New Concepts for New Forms, *California Management Review*, 28, pp. 62-73
 - Miller, D., 1996. Configurations revisited. *Strategic Management J.* 17
 - Morgan, R, E, Strong, C, A, (2003), Business performance and dimension of strategic orientation, *Journal of Business Research*, Vol. 56, No. 3
 - Nonaka, I, Konno, N, (1998), *The Concept of "ba": Building a Foundation for knowledge Creation*, California Management Review, Vol. 40, No. 3
 - Nonaka, I, Takeuchi H., (1995), *The Knowledge Creating Company*, Oxford University Press, New York Press
 - Porter, M, E, (1980), *Competitive Strategy: Technique for Analyzing Industries and Competitors*, New York: The Free Press.
 - Prusak, L, (1998), *Working Knowledge: How Organizations Manage What They Know*, Harvard Business School Press, Boston
 - Quinn, J.B. (1992), *The intelligent enterprise: a new paradigm*, The Academy of Management Executives, Vol. 6, pp. 448-64.
 - Ragu-Nathan, B, Ragu-Nathan, T,S, Tu, Q, Shi, Z, Z, (2001), Information management (IM) strategy: the construct and its measurement, *Journal of Strategic Information Systems*, Vol. 10, Issue 4
 - Reich, R. (1991), *The Work of Nations: Preparing Ourselves for the 21st Century*, Vintage Books, New York, NY.
 - Sabherwal, R, Hirschheim, R, Goles, T, (2003), *Information Systems–Business Strategy Alignment*; The dynamics of alignment: insights from a punctuated equilibrium model, in Strategic Information Management, Challenges and strategies in managing information systems, third edition, available http://www.nubkk.nu.ac.th/acad/backup/readings/Tri3_08/SIS/Strategic_Information_Management.pdf
 - Sabherwal, R, Chan, Y, E, (2001), Alignment between business and IS strategy: a study of prospectors, analyzers and defenders, *Information systems research*, Vol. 12, Issue 1
 - Sethi, V, King, W, R, (1994), Development of measures to assess the extent to which an

- information technology application provides competitive advantage. *Management Science* 40 (12)
- Tushman, M. L., C. A. O'Reilly. (1996) Ambidextrous organizations: Managing evolutionary and revolutionary change. *California Management Rev.* 38(4)
 - Vives, X, (2001), *Competition in the changing world of banking*, Working Paper Series, INSEAD
 - Wegner, D, M, (1987), *Transactive Memory: a Contemporary analysis of the Group Mind*. In Mullen, B, Goethals, G,R, *Theories of Group Behavior*, New York, Springer-Verlag
 - Zack, M, A, (1999a), *Competing on Knowledge*, 2000 Handbook of business strategy, New York: Faulkner and Gray

CURRENT CONSIDERATIONS ABOUT COST-BENEFIT ANALYSIS AND ABSORPTION OF THE STRUCTURAL AND COHESION FUNDS USED FOR INVESTMENT PROJECTS FROM ROMANIA

KAGITCI Meral

Ph. D. Assistant professor, Faculty of Finance, Banking, Insurance and Stock Exchange, Academy of Economic Studies, Bucharest, Romania, meral_ibraim@yahoo.com

BUŞU Cristian

Ph. D. Assistant professor, Faculty of Management, Academy of Economic Studies, Bucharest, Romania, cristian.busu@gmail.com

Abstract: *The purpose of this article is to point out the poor absorption problem not only in Romania but also in other Member States of the European Union in terms of Structural and Cohesion Funds. At the same time I will point out that the use of the Cost Benefit Analysis (CBA) has big flaws when it comes to funding public investment decisions in the EU cohesion policy. In terms of the Cost Benefit Analysis when dealing with the purpose of using ex-ante (that is a priority of any public commitment to the project) we find that the recipient is in full correlation with purpose and benefits, and at the same time if the winning project needs community support. This in turn leads to the use of "deficit financing method" when determining the level of the European Union Grants allotted to Member States. On this basis Romania has a very small absorption degree of Structural and Cohesion Funds not only due to the fact that it is one of the youngest members in the European Union, but also due to the poor use of financial analysis methods like the Cost Benefit Analysis.*

Key words: cost-benefit analysis, structural funds, cohesion funds, public investment

JEL classification: E 22, G 31, H 12, H 19, H 43

1. Introduction

A part of the 2007-13 budget packages for the European Union, 308 billion was allocated to support cohesion in the European Union. The majority of funds, more than 80%, are reserved for the less developed regions of the European Union. Romania has only absorbed 10% of the EU funds allocated for this country, and at the present time it is in fact paying back to the European Union more than it actually receives, mostly due to lack of eligible projects which should receive EU funding and the problematic bureaucracy of the system.

In recently Member States of the EU, the financial allocations are covered with 4% of GDP. This is the biggest transfer of resources to promote growth and convergence in Europe since the Marshall plan so far. There are high expectations that the policy will create a positive economic effect, which will help stimulate investments to achieve real convergence and economic growth. Structural and Cohesion Funds (known as "Funds") are the main tool used to promote cohesion, to reduce differences (disparities) between socio-economic development of different regions of the Union. In the new context of the "Lisbon Agenda", the EU cohesion policy targets increased growth, competitiveness, employment and contributes to sustainable development.

Cost Benefit Analysis which is probably the most comprehensive method available in economic evaluation can be implemented in two ways:

1. **Human capital approach** which means that the contribution is about what people are paid.
2. **Observed preference approach:** which is based on individuals' observed or stated preference, meaning that their personal values are based on an activity evaluation of how much money you are prepared to accept for an increased risk or pay for a service.

One of the most important disadvantage of the methods above is the "willingness to pay" (stated preference) approach. However the conclusion to this approach is based on the income of the person in question. This approach is difficult to be implemented and it has a limited usefulness. The main focus of the cost-benefit analysis is that it seeks to introduce monetary values on both inputs (costs) and outcomes (benefits). Among other things, this makes possible returns on investments in general to be compared with other returns on investments in different areas of the economy.

Cost-benefit analyzes are often used to evaluate public policies, which in turn leads to pursue of policies which generate higher benefits to lower cost estimates. Therefore, in this paper I am not only focusing my attention on the capacity to absorb European Union Structural and Cohesion Funds in

Romania, but I am also focusing on the use of Cost Benefit Analysis (CBA), in order to determine the evaluation of these funds and use the results for further studies (Ene & Dobrea, 2006). The paper will represent the basis of future extensive desk research in order to correctly identify the actors in terms of funds absorption and understand how they influence future steps in explaining methods of funds absorption.

2. Considerations and Implications Linked to the Cost Benefit Analysis Used in Valuation of Investment Projects Financed from Structural and Cohesion Funds

The involvement of public sector in the economy is considered to be accompanied by market failures and redistribution. Consider the fact that when competition is imperfect, non-exclusion and lack of competition is generated by production or consumption externalities, thus bringing forth the impossibility and no desire in charging users for a good supply when there is government intervention resulting thus, in principle, in a more efficient allocation of resources, thus leading to social welfare. When there is public involvement, intervention costs and expected benefits should be carefully compared to identify and verify if the latter exceed the former. This is the main purpose of cost-effectiveness as an assessment tool to help decision makers to make rational choices about the allocation of public resources. When talking about funds, the public intervention results in a public investment project, with occasional participation of private investors in public-private partnerships (PPP). Grants (funding) is associated with community assistance.

For the 2007-2013 stage, European Union Structural and Cohesion Funds have and will contribute through grants to the infrastructure plans within the 27 Member States, aiding some countries towards economic transition. Many have contested the effectiveness of these EU funds. Sapir Report (Sapir et al., 2004) developed and proposed a set of reforms with Cost Benefit Analysis at their basis which are implemented within current EU regulations.

Most importantly is that the EU cohesion policy should have an allocation function rather than represent the basis of support for effective objectives. In real life however this policy and most of the spending programs are just a mix of efficiency and equity objectives. There is some evidence that a convergence between Member States in terms of GDP per capita growth is the result of differences between these Member States (Mairate, 2006).

The ex-post analysis is extremely useful, however the ex-post revaluation which is based on ex-ante is informative and extremely useful in understanding whether the forecast model adopted prior to project implementation concept was adequate to support investment decision. This analysis has as primary purpose the understanding of whether the effort made to improve the quality of the project at hand should be addressed in order to identify where ex-ante decision making methodology is an effective tool.

Whenever establishing a multi-annual strategic plan which focuses on establishing key objectives and priorities in terms of investments over a period of seven years this results in the implementation of EU cohesion policy. In terms of preparation, implementation, monitoring and evaluation these fall in the responsibilities of the Member States, based on the subsidiarity principle. These phases are dealt with in collaboration with local, regional and urban partnerships with appropriate institutions and bodies which represent the civil society, thus obtaining the goals established with complex multi-government setting (Florio, 2006a).

2.1. The Poor Absorption Problem

There is a problem in the absorption of European Union funds by their recipients. The pace of this process is slow and in order to determine the absorption capacity of a country one should identify the difference between the promised credits and payments made. A good example of this is the so-called *reste à liquider* or RAL. The effective total disbursement figure for the 2007-2013 period combined for all Member States of the European Union, there are still approximately €270 billion outstanding and only €134 billion committed. These amounts are equal to the sum of 2011, 2012 and 2013 financial figures.

Table 1: Levels of Absorption of Structural and Cohesion Funds

Data Program	SOPT	Environment SOP	ROP	HDR SOP	OP IEC	OP ACD	OP TA	Average Level of Absorption
30-Sep-11	2.49%	1.89%	7.37%	2.96%	4.60%	4.73%	6.85%	4.41%
31-Oct-11	2.49%	1.89%	7.37%	2.96%	4.60%	4.73%	6.85%	4.41%
30-Nov-11	2.49%	1.89%	7.37%	2.96%	4.60%	4.73%	6.85%	4.41%
31-Dec-11	3.39%	2.12%	11.73%	5.48%	5.98%	9.08%	9.83%	6.80%
31-Jan-12	3.39%	2.12%	11.73%	5.48%	5.98%	9.08%	9.83%	6.80%
29-Feb-12	6.13%	2.54%	11.73%	5.48%	5.98%	9.08%	9.83%	7.25%
31-Mart-12	6.13%	3.38%	11.73%	5.48%	6.44%	9.08%	9.83%	7.44%

Source: www.dae.gov.ro

As you can see from Table 1 the different degrees of absorption for all seven operational programs are analyzed over a period of seven months. As a conclusion to the above table, one can see that the rate of absorption for all the programs, in general, has either followed an upward trend or remained constant over a period of several months. In average for these 7 months we find that for all seven programs the level of absorption has remained constant for the first three months discussed (4,41%), then it rose by 2.39%, reaching 6.80% holding this values steady for another two months, and in the end peaking at 7.44%. Although the level of absorption increased from February to March with 0.19%, it is still lower than the difference between January and February (0.45%), meaning we are possibly on a downward path in terms of growth. It is lower than the one experienced at the end of February 2012 in comparison with January 2012.

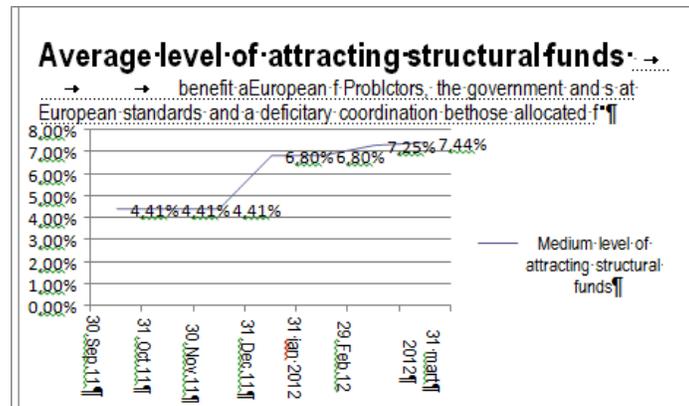
Table 2: Descriptive Statistics for European Funds

	OP TA	OP ACD	ROP	OP IEC	SOP RD	SOP ENV	SOPT
Mean	8.55%	7.22%	9.86%	5.45%	4.40%	2.26%	3.79%
Median	9.83%	9.08%	11.73%	5.98%	5.48%	2.12%	3.39%
Maximum	9.83%	9.08%	11.73%	6.44%	5.48%	3.38%	6.13%
Minimum	6.85%	4.73%	7.37%	4.60%	2.96%	1.89%	2.49%
Std. Dev.	1.59%	2.33%	2.33%	0.82%	1.35%	0.55%	1.65%
Skewness	-0.289	-0.289	-0.289	-0.158	-0.289	1.403	0.763
Kurtosis	1.083	1.083	1.083	1.218	1.083	3.589	1.804

Source: Own calculations using Eviews 7 and available data on www.dae.gov.ro.

In Table 2 we find the statistical characteristics of the level of absorption of the seven programs. As we can notice from the table ROP shows the largest values in terms of absorption level. At the opposite end we find SOP Environment which has the smallest figures in terms of absorption level. Using this table we can conclude that 11.73% of fund allotted were received by SOP Environment.

Figure 1: The Average Attraction Level of structural and Cohesion Funds



Source: Own calculations based on existing data from www.dae.gov.ro

From Chart 1 we find that most of the programs have a high average in attracting EU funds, but at the top of the scale we see ROP with 4.36 % (November 2011 - December 2011), but at the same time this rule of increase is addressed for all the seven programs thus at the end of December 2011 compared to November 2011, all had benefited from increases in values.

But in order to resolve these small values in the absorption degree Romania has to correlate the implementation of national and community legislation both at the central authorities' level, but even more importantly, at the local authorities' level and from the potential beneficiaries of the private sector, in order to determine the attraction and good use of European Union Structural and Cohesion Funds.

2.2. Institutionalizing Cost-benefit Analysis

With the granting of funds from the European Union the Commission updated the "Guide to Cost Benefit Analysis" in 2002, as to give detailed information on various areas of intervention with standard indicators of rates of return (European Commission, 2002). Member States of the European Union are responsible for implementing the provisions of special regulations for projects with a value of under 50 million Euros.

For all other projects, The European Commission is the determinant factor in terms of the contribution of funds based on information contained in the application form. The European Commission sustained the development of Cost Benefit Analysis of national frameworks, focused on providing a set of common rules which are supposed to be guidelines for the promoters of national projects. This stage was implemented in order to increase responsibility of Member States.

A short list of countries which have implemented the sustained frameworks is made of:

- Czech Republic, Slovakia established these guidelines for water projects;
- Estonia, Ireland established both general and specific guidelines on water projects;
- Italy implemented a framework plus two recent working papers on establishing methodologies to assess employment and environmental impact of major projects;
- Lithuania and Poland developed guidelines for transportation projects.

2.3. Problems in the Cost Benefit Analysis

In the end it turns out that the Cost Benefit Analysis is not at all effective. In terms of decision making in a complex public policy, the problem is that there are many proposals and not enough time and resources. The only good solution in managing this problem is to have a possibility to adopt a proposal when total benefits exceed total costs. In real life Cost Benefit Analysis is a way to determine the next step after taking into account the costs and benefits of the proposals.

In general whenever future outcomes are uncertain the economists make estimations to benefits which are not characterized in monetary values, thus ignoring the concerns about worst case hazards that motivate many policy debates.

In this chapter I will demonstrate that the majority of defects and biases within the application of Cost Benefit Analysis have its base in methodology.

a. Estimating values of benefits which cannot be defined in a monetary way

There is a problem in identifying the values of benefits which are hard or even impossible to be characterized by a certain sum. These benefits often refer to objects, states, feelings or goals which do not have a formula by which we can compute the sum of 100% achievement.

In these terms Cost Benefit Analysis cannot be applied as it needs absolute monetary values as labels for the targeted benefits.

With this at hand we might say that economists will not take into account the benefits which are not defined in a monetary way. Thus we discover a whole category of benefits which are of the utmost importance but which are considered priceless and are not deemed to be taken into account when looking at the big picture.

The term “priceless” is used whenever taking into account benefits which cannot be given a standard monetary value. This term has its base in Immanuel Kant’s philosophies: “some things have a price, or relative worth, while other things have a dignity, or inner worth. No price tag does justice to the dignity of human life or the natural world. Since some of the most important benefits of climate protection are priceless, any monetary value for total benefits will necessarily be incomplete”. Nowadays, economists are still trying to compare costs with benefits, meaning prices with dignity. This has a very peculiar result! All benefits which cannot be deemed as material and receive a monetary value are characterized to by a *ZERO COSTS* label.

b. Problematic exchanges

Together with benefits which cannot be monetized we find the following assumption that anything has a price tag, meaning that everything can be exchanged for another thing. This situation raises the following problem: can costs be traded with benefits?

All valued things can be bartered, but this assumption is false in terms of “priceless” benefits. As their value cannot be determined results obtained with the Cost Benefit analysis are misleading as economists will use artificial or invented monetary values needed when using this method.

As a rule Cost Benefit Analysis considers that the impact of benefits is the same regardless of the recipient or the facilitator. In accordance with this mentality we can say that total net benefits of policies (benefits minus costs) when the European Union pays the costs and the Member State receives the benefits. However, people in general make a difference between the facilitator and the recipient, thus pointing towards ethical problems when dealing with priceless benefits. As a response economics make efforts in pointing out that if the total net benefits are positive, the policy could choose winners to compensate losers. But in real life, the winning side chooses to keep these benefits and thus the ethical problems mentioned above persist.

c. We live in uncertain times

In order to allow the comparison between costs and benefits, Cost Benefit Analysis uses figures used in common accounting bookkeeping and these result in a precautionary use of this method. With this comes the following mentality: if one would know the outcomes of probabilities, one could compute weighted averages or expected values on just a hypothesis. But this is not valid, as in reality we have complex details and uncertain results.

However the principle of precautionary use of the Cost Benefit Analysis comes as a suitable alternative when taking into account uncertain elements of the decision-making process. This principle is simply put “better safe than sorry”. It is explained as being proactive and making choices based on warnings which are at hand, without the need of having for complete certainty. It also depicts the stages of decision-making which represent measures taken on the basis of worst case scenario, rather than average, possibilities.

d. Relative future

In general costs and benefits do not occur at the same time, and also, benefits are considered to last longer than costs. The Cost Benefit Analysis not only allocates monetary values to benefits and costs, but it is also used to convert future amounts into present values.

Discounting, which is multiplying an amount by a discount rate in order to compute present value, is used as a practice in evaluating financial transactions that occur in one lifetime. This method refers to the fact that you can make an investment now, and thus in exchange for your amount you receive a promise of a bigger gain in the future. Or, using someone else’s amount you can make a gain by promising to give that sum back with added interest. Thus the use of discounting at prevailing interest rates shows that present and future sums, are equal when measured in present value terms.

This part of the Cost Benefit analysis is sensitive and controversial when taking into account the fact that the use of European funds can have benefits which span over different generations. Thus the definition of discounting no longer applies within its real meaning and instead we find that on very long-term issues discount rates have very low values which is controversial.

e. Excessive costs

Regulatory costs generally are overestimated, in advance, several studies have found that preliminary cost estimates are more likely to be too high than too low. In general, economists, tend to present the fact that even if it is difficult to predict values of costs in the future, it is sure that their values are in a continuous decline. However, often enough, one could see that the future predictions of costs, which are used in the Cost Benefit Analysis, and are at the same time the only available estimates, are overestimated because it is considered a strategic move.

Whenever we apply the Cost Benefit Analysis, without a doubt, we have a result of small differences in costs. This in term is interpreted as the sure need of changing policies and it reflects the fact that the sole goal of policies is short-term cost savings and nothing else.

Because, the Cost Benefit Analysis focuses on monetary benefits, it will never be sufficient for decision making when having alternatives between which the cost differences are extremely small. This difference might be explained in other benefits which are outside the scope of Cost Benefit Analysis, thus making it futile in justifying the choice of one alternative over the other.

f. Debates over alternatives

Cost Benefit Analysis comes as a solution with clear objectives, focused and transparent computations regarding the advantages and disadvantages of any proposed policy. However, the advocates of this proposal fail to focus on the fact that biases may affect the choice and at the same time people have a different way of interpreting anything.

Cost Benefit Analysis is often limited by the range of alternatives they consider. Thus it becomes hard to use the same set of information in determining what alternative to choose as benefits weigh different in the minds of different economists.

Out of the problems mentioned above, the first three - the central role of inestimable value, implicit assumptions about exchanges, and the importance of uncertainty - are inevitable features of attached to this method, which requires a different approach to decision making in accordance with the best conditions available. The rest of the problems – the exaggeration of costs, future values and debates over alternatives - could theoretically be avoided if the Cost Benefit Analysis was carried out by fully informed, impartial people who have no interest in the outcomes.

3. Conclusions

As a conclusion we can say that the use of European Union Structural and Cohesion Funds through EU Cohesion Policies has a big influence over the development and acceleration of economic growth in Member States, They are used to aid Member States reach a unified level of economic development and result in a unified Europe.

However in Romania “One of the most urging challenges of the country concerns infrastructure e.g. underdeveloped road, rail, water, air transport system and networks, lack of inter-connectivity as well as the poor quality of drinking water, sewage and waste management, and the lack of environmental awareness”(NSRF 2007:4). In this matter not only should the focus be put in SOP Transport and SOP Environment, but at the same time we need competent specialists to use CBA in order to better allow the use of these funds and increase our absorption level. However, in the real world, these idealized, omniscient, non-political analysts are scarcely found, leading to decision making choices made on the basis of wrong assumptions which in turn resulted in the fact that, after five years after the launch of these programs, Romania was only been able to spend 1% of the funds supporting transport and 2% of those allocated to the environmental infrastructure.

Thus as a suggestion we should focus on reforms of the administration of Structural and Cohesion Funds by using Cost Benefit Analysis better, by trying to avoid the problems mentioned in this article. At the same time one should improve the entire process in terms of receiving and using Structural and Cohesion Funds by its beneficiaries by identifying correctly the true benefits expected from these investment projects.

4. Acknowledgements

This article has benefited from financial support through the project „Post-Doctoral Studies in Economics: continuous training program for elite researchers – SPODE”, financing contract number POSDRU/89/1.5/61755, European Social Fund project funded by Human Resources Development Sectorial Operational Programme 2007-2013

5. References

- Ackerman, F., (2008), *Critique of Cost-Benefit Analysis, and Alternative Approaches to Decision-Making*
- Ackerman, F.,(2006) *The Unbearable Lightness of Regulatory Costs*, Fordham Urban Law Journal 33 no. 4, pg.1071-1096.
- Chiara Del Bo, Florio, M., (2011), *Public Enterprises, Policy adoption and Planning: Three Welfare Propositions*; Working Paper n. 2011-28; Novembre 2011.
- Cropper, Maureen L & Oates, Wallace E, 1992. "Environmental Economics: A Survey," Journal of Economic Literature, American Economic Association, vol. 30(2), pages 675-740, June
- Cropper, Maureen L; Evans, W.; Berardi, S.; Ducla-Soares, M.; Portney, P, 1992. *Journal of Political Economy*, vol 100, no.1, pages 175-197, February
- Dahlby, B., (2008), *The Marginal Cost of Public Funds: Theory and Applications*, Cambridge, MA The MIT Press
- Drèze J.; Stern N., (1987), *The theory of cost-benefit analysis*, in Auerbach A., Feldstein M (eds), *Handbook of public economics*, Vol II, Amsterdam and New York: North Holland, 909-989.
- Ene, N.; Dobre, C. (2004), *Indicatori utilizati in evaluarea programelor socio-economice finantate prin Fondurile Structurale*, Administratie si Management Public, nr. 2
- Florio, M., (2007), *Introduction: multi-government cost-benefit analysis, shadow prices and incentives*, in Florio (ed) *Cost-benefit analysis and incentives in evaluation. The Structural Funds of the EU*, Cheltenham, UK and Northampton, USA: Edward Elgar Publishing, 1-46.
- Florio, M, (2006), *Government Cost-Benefits Analysis: Shadow prices and Incentives*; Working Paper no. 2006-37; November 2006
- Florio, M.; Vignetti, S., (2009), *Building a bridge across CBA traditions: the contribution of EU regional Policy*; Working Paper n. 2009-16; July 2009
- Florio, M.; Vignetti, S., (2003), *Cost-benefit analysis of infrastructure projects in an enlarged European Union: An incentive-oriented approach*, Working Paper n. 13.200-giugno
- Frick, K., (2007), *Cost-benefit and Cost-effectiveness analysis*, John Hopkins University
- Gherghinescu, O.; Rinderu, P. and Spulbar C., (2009), *Analysis of Structural and Cohesion Adsorption in Romania; Finance – Challenges of the Future*, Year VIII, No. 9/2009
- Jones, L.P; Tandon, P. and Vogelsang I., (1990), *Selling Public Enterprises: A Cost/Benefit Methodology*, The MIT Press.
- Laffont and Tirole (1993) *A Theory of Incentives in Procurement and Regulation*, MIT Press
- Layard, R. (1972), *Cost Benefit Analysis*, London, UK: Penguin Books
- Mairate, A. (2006), *Does cohesion help economic growth?*, University of Milan – Department of Economics working paper no. 6
- Mendez, R.P. (1992), *International Public Finance – A New Perspective on Global Relations*, Oxford University Press
- Nyborg, K. ; Spangen, I., (2000), *Cost-benefit analysis and the Democratic Ideal*
- Osborne, M.J.; Turner, M.A., (2007), *Cost benefit analysis vs. referenda*, Working Paper 286, April 13, 2007
- Sapir, A.; Aghion, P.; Bertola, G.; Hellwig, M.; Pisani-Ferry, J.; Rosati, D.; Vinals, J., Wallace, H.; Smith, P. (2004), *An Agenda for a Growing Europe: The Sapir Report*
- Sartori, D.; Florio, M., (2010), *Getting incentives right: do we need ex post CBA?*, October 6 - 8, Prague
- Szabo, I. (2011). *Addressing Structural Funds 'absorption challenges: the case of Romania's bottleneck*, Central European University Department of Public Policy, 21,30
- Viscusi, W.; Smith, R.; (1996), *Regulating the regulators*, University of Chicago Law Review, 63
- The European Bank Coordination ("Vienna") Initiative. (2011). *The Role of Commercial Banks in the Absorption of the EU Funds Report* By the Working Group Approved by the EBCI Full forum Meeting (16-17 March), 1-15

EMU-INDUCED TAX MIXES CHANGES A MULTIDIMENSIONAL ANALYSIS OF EURO AREA FISCAL STRUCTURES

LAZĂR Isadora

Ph. D. Student, Academy of Economic Studies, Researcher, National Scientific Research Institute for Labor and Social Protection, Bucharest, Romania, lazar.isadora@yahoo.com

Abstract: *The objective of this paper is to determine whether the EMU induced its Member States a tendency of similar tax revenues structures, independent of the European regulations. Due to the fact that the primary analysis of tax systems revealed many similarities but also differences, the paper includes cluster analysis that classifies into subgroups based on common characteristics. It was taken into account the structure of tax revenues over a period of 10 years, considering four categories of fiscal variables: fiscal revenues, direct taxes, indirect taxes, social contributions. The multidimensional analysis of tax structures shows small changes, but indicates a trend of structural resemblance: the same number of clusters is maintained, but the structure of the subgroups was changed.*

Key words: European and Monetary Union, fiscal revenues, taxation, euro area, fiscal structures

JEL classification: H 20, H 50, O 23, O 57

1. Introduction

The functioning of the EMU (Economic and Monetary Union) generated a growing interest in studying fiscal policies, their role, effects and changes in the context of monetary unions. This is mainly due to the fact that fiscal policies are the main instruments that euro area (EA) Member States (MS) have at their disposal in order to maintain stability, enjoying an increased level of freedom in decision, the sole limits being those imposed by the European Stability and Growth Pact and the subsequent attempts to strengthen it (such as the Euro Plus Pact). Therefore, due to the increased importance of fiscal policies, many studies have analyzed the processes of coordination, harmonization, standardization. The aim of this paper is to identify whether membership in Economic and Monetary Union induced its Member States a convergent trend regarding the structure of tax revenues, independent of the European regulations.

2. Primary Data Analysis

Having in view the above mentioned objective, the research began with the primary analysis of the fiscal variables. Although all countries have been seriously challenged by the crisis and faced many changes, all euro area Member States remain similar in at least one aspect: tax revenues remain the main resource for public administrations. The euro area average is 23.8%. The structure of direct taxes and indirect taxes is not the same for all MS. In 12 of the 17 states of the EA, indirect taxes provide most of the financial resources to the general budget, constituting over 50% of tax revenue. This is the case of Estonia (67%), Slovakia (65%) and Slovenia (63%). Indirect taxes are prevailing also in France (59%), Portugal (58%), Cyprus and Greece (57%), Germany (54%), Austria (41%), Ireland (51%), Malta and Netherlands (50%). In the other 5 MS direct taxation is preferred.

Indirect taxes consist of taxes on products and other taxes on products, of which the main source of income is the first category, composed of VAT type taxes, taxes and duties on imports excluding VAT and taxes on products except VAT and imports taxes. VAT type taxes remain, for all Member States, the most important subset of indirect taxes. In the euro area, VAT type taxes, as a share of GDP, stands at 7%. Maximum amounts received by the formula reached 8.9% (Estonia and Cyprus), Finland (8.6%) and Austria (8%). As a percentage of total tax revenue, VAT, in the euro area, stands up to 30%. Above this level are 7 of the 17 Member States. In countries like Slovakia and Estonia, weights of 42 % and 40% can be reached. The lowest rates of VAT tax revenue were recorded in 2009 by Italy (19%), Spain (21%). Out of the 17 states, in only four cases the share of VAT in total tax revenue is below 25%.

The tax burden is calculated as the share in GDP of the total amount collected from taxes (direct taxes + indirect taxes) and social contributions. In the euro area, the average value registered by the MS is 36.9%. The highest rate is recorded by Belgium (45.1%), followed by Austria (44.2%) and France (43.6%); it is not maintained the hierarchy established by the criteria of the share of total revenues in the GDP. Finland, which is ranked first by this criterion, although joins the group of MS with tax burden

higher than 40% and above euro area average, is ranked just 5, with 43.1% tax burden. In contrast, in Slovakia (28.6) and Ireland (29.4), the tax burden lies just below 30%. Below euro area average is also Estonia (35.7), which recorded in 2009 the lowest financial revenues, but also the smallest deficit.

Table 1: Structure of public revenues 2009 (% GDP)

	Belgium	Germany	Estonia	Ireland	Greece	Spain	France	Italia	Cyprus	Luxembourg	Malta	Netherlands	Austria	Portugal	Slovenia	Slovakia	Finland
Taxes on production and imports	12.6	12.7	14.9	11.3	11.1	8.7	14.9	13.6	15.1	11.7	13.9	11.9	14.7	12.7	14.1	10.3	13.5
Taxes on products	10.7	10.7	14.1	10.0	10.6	7.5	10.3	10.6	13.1	10.3	13.3	10.7	11.4	11.8	13.1	9.6	13.3
Value added type taxes (VAT)	6.8	7.3	8.9	6.3	6.2	4.0	6.7	5.6	8.9	6.1	7.7	7.0	8.0	7.0	8.3	6.6	8.6
Taxes and duties on imports excluding VAT	0.3	0.6	5.0	2.0	0.1	0.0	0.0	0.0	0.8	3.4	0.0	0.7	0.0	0.4	0.0	0.0	0.0
Taxes on products, except VAT and import taxes	3.6	2.8	0.2	1.6	4.3	3.5	3.7	5.0	3.5	0.7	5.6	3.0	3.5	4.5	4.7	3.0	4.7
Other taxes on production	1.8	2.0	0.8	1.3	0.5	1.2	4.6	3.0	2.0	1.5	0.6	1.1	3.3	0.9	1.0	0.7	0.3
Current taxes on income, wealth, etc.	15.2	10.8	7.5	10.7	8.2	9.6	9.8	14.6	11.2	13.9	13.6	11.8	12.8	9.1	8.4	5.5	16.3
Taxes on income	14.6	10.6	7.5	10.3	7.6	9.3	8.8	14.2	10.4	13.2	13.0	10.8	12.1	8.6	7.8	5.2	15.5
Other current taxes	0.6	0.3	0.0	0.4	0.6	0.2	1.0	0.5	0.8	0.7	0.6	1.1	0.7	0.4	0.6	0.3	0.7
Total tax receipts	28.4	23.7	22.4	22.2	19.5	18.7	25.1	29.1	26.3	25.8	27.7	24.0	27.6	21.8	22.5	15.8	30.1
Actual social contributions	14.4	16.0	13.1	5.8	10.3	12.4	16.6	13.9	8.6	11.2	6.0	13.8	15.0	9.0	15.0	12.7	13.0
Imputed social contributions	2.3	1.1	0.2	1.4	2.8	0.9	1.9	0.3	0.0	0.9	1.4	0.8	1.6	2.9	0.3	0.1	0.1
Social contributions	16.7	17.1	13.3	7.2	13.1	13.3	18.5	14.2	8.6	12.1	7.4	14.6	16.6	11.9	15.3	12.8	13.0
Fiscal burden	45.1	40.8	35.7	29.4	32.6	32.0	43.6	43.3	34.9	37.9	35.1	38.6	44.2	33.7	37.8	28.6	43.1

Source: Eurostat, own calculations

3. Multidimensional Analysis of Euro Area Fiscal Structures

Since the primary analysis of tax systems in Member States of the euro area reveals many similarities but also differences, in order to classify tax revenues into subgroups based on common characteristics, the cluster analysis was used. The analysis is based on the structure of tax revenues, for a period of 10 years (1999-2009), 2009 being the latest available data. Were considered the following four categories of fiscal variables: income tax, direct taxes, indirect taxes, social contributions. The data were analyzed only for 16 out of the 17 Member States of the euro area, since data for Estonia, that recently joined, although available, are not relevant for the group trend analysis between 1999 and 2009.

Methods of multidimensional statistical analysis were previously applied by Peters (1991) that used cluster analysis to group 22 OECD countries, according to their tax systems. He took into account the share of each type of tax in total revenues. The result was four groups of countries, as follows: English-speaking countries, Scandinavian countries, countries with a broad tax base in which using all types of taxes provides total tax revenues about the average of OECD countries and Latin countries. An interesting fact is that groups of countries defined this way occurred since 1970, and this division is used in tax literature even today.

The multidimensional classification method used to group European countries was also applied by Heinemann (1999), Bernardi (2003) and Kemmerling (2003). Heinemann examined the influence of globalization on four dimensions: the tax system, expenditure system, debt and total budget in OECD countries, using Euclidean distance as part of its multi-dimensional analysis. The results confirm a trend of convergent tax systems regarding the division in direct and indirect taxes. Bernardi conducted this analysis on the European countries for the period 1970-1997. His analysis revealed four groups: the

Nordic countries- with very high tax burden, states with tax burden higher than the Union average, Anglo-Saxon countries, with tax burden closer to EU average, and Mediterranean countries, with taxes lower than the average. Kemerling investigated the role of different structures of public budgets in the evolution of the welfare state in OECD countries. His analysis highlights similar groups of countries with the ones obtained by Bernardi. The last two authors obtained similar results in terms of total tax burden and tax structure.

Kubátová, Vaněurová, Foltysová (2008) used cluster analysis for the analysis of 21 OECD countries for the period 1965 to 2003. They identified subgroups with similar tax structures in order to explore the impact of globalization on the structure of taxation. The analysis results confirm that the structures of OECD countries have gradually resembled under the pressure of globalization. The researchers used the hierarchical method and took into account the Euclidean distance between objects.

The cluster analysis was also applied by Delgado (2009). He took into consideration the tax burden and tax structure, for the same purpose of determining groups of countries with similar characteristics, as in his work he investigates the convergence of tax burdens in the European Union in the context of the objective of economic integration and tax harmonization trends. The study reveals five clusters, as follows: Belgium, Finland and Sweden, Greece and Portugal, Ireland and the United Kingdom, and Denmark, cluster 5 containing all the others. He also used the hierarchical method and analyzed the tax burden and the three main components of tax revenue, according to OECD classification: income and profit taxes, social contributions, taxes on goods and services. OECD data were used for the period 1965 - 2005 and EU15. The results reveal some interesting changes: the number of groups increased from 4 to 5 (due to Denmark's differential behavior). Nevertheless, some similarities remain.

Braşoveanu (2009) also applied cluster analysis based on Euclidean distances, for 1995, 2000, 2006, 2008 to capture the evolution of the structure of tax revenues from one period to another. EU countries have been grouped into six clusters, of which Denmark was placed in a distinct cluster in this study, due to its features that differentiate it from other states.

This multidimensional procedure attempts to identify relatively homogeneous groups of cases (or variables), selected based on their characteristics, considering the simultaneous interaction of variables. Multiple distances can be selected; the procedure displays statistics for each step to help select the optimal number of clusters. In the hierarchical classification method, the algorithm starts from clusters containing a single element (cases) and combines clusters until only one cluster is obtained. Hierarchical method is the best option for this analysis, taking into account the number of cases and that is one of the most direct multidimensional classification methods, and also that the data does not require standardization. It was decided on the range of solution, with possible solutions: from 2 to 6, starting from the idea of differentiation up to the maximum number of clusters found in the literature so far (6). For the interpretation Dendrogram and Icicle were used. In the Dendrogram representation, distances between elements that come together are transformed on a 0-25 scale, maintaining the distance ratio. Was chosen to display the output of all combinations of each iteration, distances etc. From the Statistics module was selected the Agglomeration Schedule option, Proximity Matrix for displaying the distances or similarities between items and Cluster Membership option for displaying cluster membership in one or more iterations. In the analysis the squared Euclidean Distance was used. This distance shows how far apart objects are: the smaller the distance, more similar are the objects. Since the dissimilarity matrix was used, were taken into consideration the small values of the coefficients that shows distances between groups.

Table 2: Correspondence between countries and the numbers assigned

Belgium	Germany	Ireland	Greece	Spain	France	Italy	Cyprus
1	2	3	4	5	6	7	8

Luxemburg	Malta	Netherlands	Austria	Portugal	Slovenia	Slovakia	Finland
9	10	11	12	13	14	15	16

The proximity matrix, the dissimilarity matrix in this case, shows the distances between elements. All values on the diagonal are, obviously 0, since a registration cannot differ from itself. Also, the distance between X and Y is the same as the distance between Y and X. The shortest distance between cases is 6:12, which are the most similar countries (Austria and France). The most different cases are 15 and 16 (Slovakia and Finland), where the distance is 216,460, but also between 1:15 (Belgium and Slovakia).

Figure 1: Proximity Matrix

		Squared Euclidean Distance														
Case	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	,000	79,780	120,550	142,650	129,750	40,130	11,580	186,180	28,760	216,460	70,110	22,050	161,620	144,150	410,620	10,830
2	79,780	,000	189,910	67,970	40,970	34,750	82,000	131,460	79,440	147,580	4,430	36,990	105,600	53,670	199,460	148,430
3	120,550	189,910	,000	77,560	100,060	156,780	76,470	51,590	35,590	61,470	138,680	125,640	52,870	157,800	257,290	132,820
4	142,650	67,970	77,560	,000	9,420	85,320	96,470	25,770	62,670	19,190	41,620	81,460	5,390	29,320	97,830	205,680
5	129,750	40,970	100,060	9,420	,000	84,980	102,050	29,350	62,870	35,630	21,300	79,120	21,950	44,500	81,970	201,020
6	40,130	34,750	156,780	85,320	84,980	,000	28,750	171,310	56,410	175,030	34,420	3,560	116,910	45,300	323,750	77,340
7	11,580	82,000	76,470	96,470	102,050	28,750	,000	141,460	14,100	156,380	64,350	13,850	107,380	97,910	361,080	22,710
8	186,180	131,460	51,590	25,770	29,350	171,310	141,460	,000	74,860	6,680	89,470	151,030	13,480	109,830	78,840	245,330
9	28,760	79,440	35,590	62,670	62,870	56,410	14,100	74,860	,000	94,760	52,530	34,510	63,980	100,430	266,160	49,270
10	216,460	147,580	61,470	19,190	35,630	175,030	156,380	6,680	94,760	,000	104,230	161,290	6,220	90,430	77,220	278,090
11	70,110	4,430	138,680	41,620	21,300	34,420	64,350	89,470	52,530	104,230	,000	31,980	69,610	44,320	169,190	133,500
12	22,050	36,990	125,640	81,460	79,120	3,560	13,850	151,030	34,510	161,290	31,980	,000	107,130	57,960	319,670	52,940
13	161,620	105,600	52,870	5,390	21,950	116,910	107,380	13,480	63,980	6,220	69,610	107,130	,000	53,550	101,580	217,690
14	144,150	53,670	157,800	29,320	44,500	45,300	97,910	109,830	100,430	90,430	44,320	57,960	53,550	,000	180,130	209,340
15	410,620	199,460	257,290	97,830	81,970	323,750	361,080	78,840	266,160	77,220	169,190	319,670	101,580	180,130	,000	528,010
16	10,830	148,430	132,820	205,680	201,020	77,340	22,710	245,330	49,270	278,090	133,500	52,940	217,690	209,340	528,010	,000

This is a dissimilarity matrix

Agglomeration schedule shows combinations for each iteration. Using this matrix was decided on the most appropriate number of clusters for the cases considered, through the interpretation of the assigned coefficients.

Figure 2: Agglomeration Schedule

Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	6	12	3,560	0	0	10
2	2	11	4,430	0	0	11
3	4	13	5,390	0	0	6
4	8	10	6,680	0	0	6
5	1	16	10,830	0	0	9
6	4	8	13,148	3	4	8
7	7	9	14,100	0	0	9
8	4	5	19,292	6	0	12
9	1	7	21,848	5	7	10
10	1	6	31,279	9	1	14
11	2	14	47,888	2	0	12
12	2	4	58,193	11	8	13
13	2	3	81,509	12	0	14
14	1	2	76,112	10	13	15
15	1	15	190,045	14	0	0

Analyzing the above coefficients, formation of clusters we stopped at stage 9, since from this stage on, the coefficients increase significantly.

Therefore, cluster membership for year 1999 is the following:

Cluster 1: 1, 16, 7, 9, 15, 16, 12 France, Austria, Belgium, Finland, Italy, Luxembourg, Slovakia

Cluster 2: 2, 11, 14 Germany, Netherlands, Slovenia

Cluster 3: 4, 13, 8, 5, 10 Greece, Portugal, Cyprus, Spain, Malta

Cluster 4: 3 Ireland

Cluster 5: 15 Slovakia

For 1999 were validated all the 16 cases recorded, as shown in the following figure:

Figure 3: Case Processing Summary(a)

Cases					
Valid		Missing		Total	
N	Percent	N	Percent	N	Percent
16	100,0	0	,0	16	100,0

a Centroid Linkage

For 2009, the results are as follows:

Figure 4: Proximity Matrix

Case	Squared Euclidean Distance															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	,000	44,270	134,590	147,520	144,750	50,270	2,110	60,790	19,860	75,550	31,930	11,660	110,430	84,150	261,520	7,030
2	44,270	,000	108,260	59,450	55,440	8,200	49,180	67,480	38,070	125,280	6,580	24,250	55,540	10,200	107,190	80,860
3	134,590	108,260	,000	33,830	63,820	138,860	134,080	39,380	52,530	45,460	68,820	129,810	14,960	97,900	116,650	150,460
4	147,520	59,450	33,830	,000	12,810	88,090	152,690	74,170	73,360	122,730	46,110	121,860	10,390	40,170	27,420	191,030
5	144,750	55,440	63,820	12,810	,000	97,080	159,580	115,880	79,430	165,040	45,140	132,370	37,580	51,960	28,030	198,260
6	50,270	8,200	138,860	88,090	97,080	,000	48,180	67,600	56,790	134,600	22,060	18,010	74,140	12,080	141,510	82,180
7	2,110	49,180	134,080	152,690	159,580	48,180	,000	50,380	22,770	65,820	37,000	8,550	109,000	84,100	272,670	4,960
8	60,790	67,480	39,380	74,170	115,880	67,600	50,380	,000	25,870	15,960	43,020	45,370	30,580	64,240	182,590	62,460
9	19,860	38,070	52,530	73,360	79,430	56,790	22,770	25,870	,000	35,590	14,490	27,900	44,890	61,350	174,780	30,770
10	75,550	125,280	45,460	122,730	165,040	134,600	65,820	15,960	35,590	,000	81,780	82,330	65,540	135,160	265,110	62,220
11	31,930	6,580	68,820	46,110	45,140	22,060	37,000	43,020	14,490	81,780	,000	23,330	35,900	20,180	110,790	60,660
12	11,660	24,250	129,810	121,860	132,370	18,010	8,550	45,370	27,900	82,330	23,330	,000	87,330	45,730	217,180	24,030
13	110,430	55,540	14,960	10,390	37,580	74,140	109,000	30,580	44,890	65,540	35,900	87,330	,000	38,940	68,410	137,460
14	84,150	10,200	97,900	40,170	51,960	12,080	84,100	64,240	61,350	135,160	20,180	45,730	38,940	,000	73,030	124,620
15	261,520	107,190	116,650	27,420	28,030	141,510	272,670	182,590	174,780	265,110	110,790	217,180	68,410	73,030	,000	331,550
16	7,030	80,860	150,460	191,030	198,260	82,180	4,960	62,460	30,770	62,220	60,660	24,030	137,460	124,620	331,550	,000

This is a dissimilarity matrix

The minimum distance is between cases 1 and 7, of 2.110 (Belgium and Italy). The largest distance is between cases 16 and 15, of 331.550 (Slovakia and Finland).

Analyzing the coefficients of Agglomeration Schedule, the formation of clusters was stopped at step 10, since from this stage on, the coefficients increase significantly.

Figure 5: Agglomeration Schedule

Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	1	7	2,110	0	0	2
2	1	16	5,468	1	0	7
3	2	11	6,580	0	0	6
4	4	13	10,390	0	0	10
5	6	14	12,080	0	0	6
6	2	6	10,495	3	5	13
7	1	12	13,180	2	0	9
8	8	10	15,960	0	0	14
9	1	9	21,679	7	0	13
10	3	4	21,798	0	4	12

11	5	15	28,030	0	0	12
12	3	5	40,865	10	11	15
13	1	2	41,629	9	6	14
14	1	8	51,400	13	8	15
15	1	3	78,138	14	12	0

In 2009, cluster membership was as follows:
Cluster 1: 1, 7, 16, 12, 9 Belgium, Italy, Finland, Austria, Luxembourg
Cluster 2: 2, 11, 14, 6 Germany, Netherlands, Slovenia, France
Cluster 3: 4, 13, 3 Greece, Ireland, Portugal
Cluster 4: 5, 15 Spain, Slovakia
Cluster 5: 8, 10 Cyprus, Malta

Variables have been validated this time also, 100% valid, 0 missing.

Figure 6: Case Processing Summary(a)

Cases					
Valid		Missing		Total	
N	Percent	N	Percent	N	Percent
16	100,0	0	,0	16	100,0

a Centroid Linkage

From 1999 to 2009 the same number of clusters remains, but the subgroups were changed.

Finland and Austria registered the highest levels of financial resources, followed by France and Belgium; the first two clusters are specific to states with above average taxes (an exception is Luxembourg, which is below the euro area average). In the analyzed period is kept the same number of clusters, but the subgroups are changed. The composition of the first cluster remains the same, except France that joined the second cluster. This is in fact the only change from the second cluster occurred in 2009 compared to 1999. Significant changes occur in the following three clusters. Greece and Portugal remain similar regarding tax mixes and thus belong to the same cluster; so are Malta and Cyprus, but they were in 1999 in the same subgroup with Greece, Portugal and Spain; in 2009 form a separate cluster. Spain has differentiated from cluster three states and joined Slovakia.

4. Conclusions

The analysis for the period 1999 - 2009 underlines changes in the clusters structure, indicating a tendency of amending taxation in the euro area Member States. The first two clusters belong to countries that have managed to meet deficit targets; are states where the tax burden is high (Belgium, Austria, and France). Clusters 3 and 4 include countries with low tax burden (Slovakia 28.6%, Ireland 29.4%). Clusters 3 and 4 include countries with excessive deficits such as Greece, Ireland, and Spain.

The multidimensional analysis of tax structures shows small changes, but indicates a trend of structural resemblance: in the period considered the same number of clusters is maintained, but the structure of the subgroups was changed.

In terms of tax structure and its division into direct and indirect taxes cannot be concluded on the formation of a cluster, based only on this criterion. It is thus emphasized the importance of a multidimensional analysis, that does not only take into account multiple variables but also gives more complete and relevant results than the primary analysis.

The current challenges imposed to fiscal policies by the economic crisis provides an opportunity to rethink the tax systems, to strengthen the objectives of taxation, to assess potential conflicts between different objectives and determine the structure of a fiscal system adapted to the current requirements.

5. References

- Angeloni, I.; Dedola, L. (2007) *From the ERM to the Euro: New Evidence On Economic and Policy Convergence Among EU Countries*, European Central Bank, Working Paper No. 4.

- Babucea, A.; Dănăciță, E. (2009) *Analiza cluster in studii de proximitate a șomajului înregistrat la nivelul județelor României la începutul crizei economice*, Analele Universității "Constantin Brâncuși", Târgu Jiu, Seria Economie, Nr. 1
- Bernardi, L. (2003) *Tax Systems and Tax Reforms in Europe: Rationale and Open Issues of More Radical Reforms*, Working Paper, Italy
- Brașoveanu, I. (2002), *Analize ale politicii fiscale in Romania si in statele membre ale Uniunii Europene*, Editura Ase, Bucuresti, ISBN 978606-505-193-5
- De Bandt, O; Mongelli, F. P. (2000) *Convergence of Fiscal Policies In the Euro Area*, European Central Bank, Working Paper No. 20
- Delgado, F. J.; Presno, M. J. (1993) *Tax Policy Convergence in EU: An Empirical Analysis*, University of Oviedo,
- Delgado, F. (2009) *La estructura tributaria europea: un estudio comparado*, Crónica Tributaria,
- Delgado, F.J.; Presno M.J. (2007) *Convergence of the Fiscal Pressure in the European Union: a time series approach*, Working Paper 19/07, Instituto de Estudios Fiscales, Madrid
- Delgado, F.J. (2008) *Presión Fiscal en la Unión Europea: un Análisis de Beta, Sigma y Gamma Convergencia*, Revista de Economía Mundial
- Esteve, V.; Sosvilla-Rivero, S.; Tamarit, C. (2000) *Convergence in Fiscal Pressure across EU countries*, Applied Economics Letters 7(2)
- European Commission (2003), *Structures of the Taxation Systems in the European Union, data 1995-2001*, 2003 edition, Luxembourg
- European Commission (2003), *Taxation trends in the European Union Data for the EU Member States and Norway, 2007*
- European Commission (2010) *Monitoring Tax Revenues and Tax Reforms in EU Member States 2010, Tax policy after the crisis*, European Economy, 6
- Furtună, T.F. (2002) *Algoritmi de clasificare în statistica teritorială*, Revista de statistică, nr. 2
- Ganghof, S. (2006) *Tax Mixes and the Size of the Welfare State: Causal Mechanisms and Policy Implications*, Journal of European Social Policy
- Ganghof, S. (2006) *The Politics of Tax Structure*, MPIfG Working Paper 06/1, Max Planck Institute for the Study of Societies Cologne
- Hallerberg, M.; Basinger S. (1998) *Internationalization and Changes in Tax Policy in OECD Countries*, Comparative Political Studies, 31(3), p. 321-353
- Heinemann, F. (1999) *Does Globalization Restrict Budgetary Autonomy? A Multidimensional Approach*, Center for European Economic Research
- Kemmerling, A. (2003), *The Political Economy of Tax Mixes in OECD Countries*, Berlin, Freie Universität
- Korobow, L.; Stuhr, D.P. (1991) *Using Cluster Analysis as a Tool for Economic and Financial Analysis*, Federal Reserve Bank of New York, Research Paper No. 9132
- Kubátová, K.; Vaněurová, A.; Foltysová, M. (2008), *Impact of Globalization on Taxation Mixes in OECD Countries during 1965-2003*, Prague Economic Papers
- Lee, Y.; Gordon, R.H. (2005) *Tax Structure and Economic Growth*, Journal of Public Economics
- Peters, B. G. (1991) *The Politics of Taxation a Comparative Perspective*. Cambridge, MA: B. Blackwell
- Sørensen, C.; Gutiérrez, J. (2006) *Euro Area Banking Sector Integration Using Hierarchical Cluster Analysis Techniques*, no 627
- SPSS, Cluster Analysis, <http://www.cs.uu.nl/docs/vakken/wo2/SPSS/spss8.pdf>
- Statsoft, Electronic Statistics Textbook, <http://www.statsoft.com/textbook/cluster-analysis/>

IS THE ROMANIAN BANKING SYSTEM INTEGRATED INTO THE EUROPEAN ONE? A MONEY MARKET PERSPECTIVE

LOVIN Horațiu

Ph. D. Student, Academy of Economic Studies, Bucharest, Romania, horatiu.lovin@gmail.com

Abstract. *The study aims to analyze contagion risk from euro area money market to the Romanian one since the onset of global financial crisis (October 2008). Most banks in Romania are owned by financial institutions located into euro area, resulting in a strong connection between the two banking systems. The empirical results reveal linkages between the euro area money market and the Romanian one, but also partial decoupling during the sovereign debt crisis within euro area, when volatility jumped on euro area money market.*

Key words: liquidity, banking system, risk management, contagion

JEL classification: G 21, G 32, G 01

1. Introduction

The international financial crisis that started in the fall of 2008 with the bankruptcy of investment bank Lehman Brothers in the United States significantly changed the perception of banks in Romania on liquidity risk. There was a sudden shift from an environment of abundant liquidity that allowed banks a high appetite for both liquidity and credit risks to an environment of high uncertainty. As a consequence, the banks increased their cash reserves and restricted credit activities.

Foreign capital in the Romanian banking system is provided mainly by financial institutions located within the euro area. Therefore, money market developments in Europe are expected to influence at least to some extent the Romanian interbank market. The developments within money market emphasize credit and liquidity risks faced by the banking system.

This study aims to quantify the correlation between the money market interest rates in Romania and euro area and to detect possible contagion from the euro area money market to Romanian one since the onset of global financial crisis (October 2008). Contagion implies a significant increase in interest rate volatility in both money markets during financial turmoil in euro area money market. Hence, contagion analysis involves also detection of volatility clusters in money markets considered within the study.

2. Literature review

Cetorelli and Goldberg (2011) studied the liquidity management for the banking groups in the United States. The authors have noted that during international financial crisis, foreign offices of United States banks received funding from parent banks, but after September 2008 and at the peak of the crisis (approximately the first quarter of 2009), banks located abroad have repatriated funds to the parent banks from United States. Liquidity shocks generated at the parent bank levels do not propagate in a similar way within banking groups. There are branches that are functioning as liquidity providers for the group and are branches that invest group resources.

Using a GARCH model analysis, Beirne et al (2009) identified contagion on equity markets from developed capital markets to the emerging ones (including Romania). Conditional variance in most emerging countries considered in the study increased in periods of instability in the developed capital markets. Changes in conditional correlations between developed and emerging markets in times of turmoil in developed markets were driven in many cases by high relative growth in volatility within developed capital markets. The study considered also Forbes and Rigobon (2002) work on adjusting the correlation with volatility in order to detect the “true” contagion.

Dinger (2009) developed an analysis about banking systems in Central and Eastern Europe, observing that Romania together with Bulgaria were among the last countries in the region that have liberalized capital account, while Estonia and Hungary were among the first countries that allowed foreign banks. Therefore, Romania benefited latter that peer regional group from the stability provided by foreign banks presence within the domestic banking system.

Haas and Lelyveld (2006) studied whether foreign owned banks and the domestic ones located in emerging European countries have reacted differently to business cycle conditions and banking crises from host countries. They also assessed whether the parent banks transmit tensions to their cross border

subsidiaries and have estimated the influence of economic growth in the home countries on their subsidiaries activities from host emerging countries. There is a negative correlation between economic activity in home countries and subsidiaries credit activity in host countries.

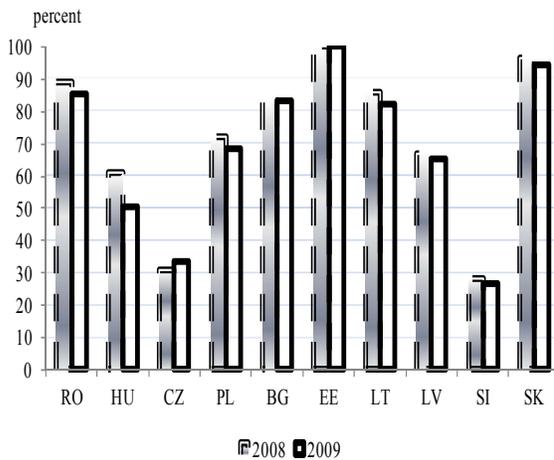
3. Data

Data used in this study include daily developments in the money market interest rates for Romania and the euro area, but also annual data regarding banking sector in Central and Eastern Europe. Data sources are the websites of the central banks from Romania and Germany and reports published by European Central Bank concerning European banking sector.

4. Foreign capital presence within Romanian banking system

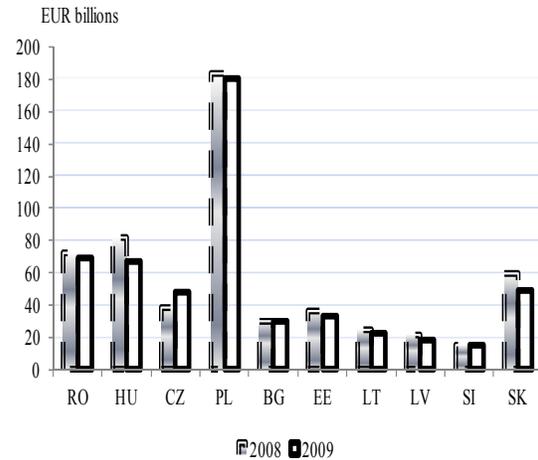
Although Romania stood behind other countries in the region in terms of steps to liberalize the capital account, the banking system has undergone a process of privatization and openness to foreign capital since 1990, so in early 2008, just before the onset of the global financial crisis, the share of foreign capital was dominant.

Figure 1: The share of assets hold by foreign banks within countries from Eastern and Central Europe



Source: EU Banking Sector Stability, ECB (September 2010)

Figure 2: Total assets hold by foreign banks within countries from Eastern and Central Europe



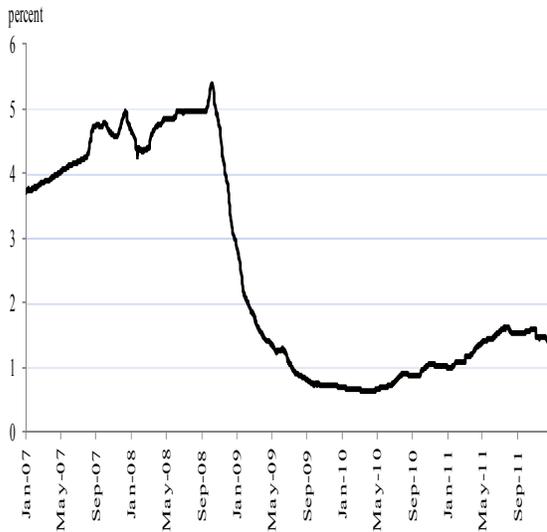
Source: EU Banking Sector Stability, ECB (September 2010)

In figure 1 can be observed the strong presence of foreign capital in the Romanian banking system, compared to the peer regional group. Even if Romania and Bulgaria opened later their capital account, the presence of foreign capital was among the highest in the region at the onset of financial crisis. In absolute terms, foreign banks' exposure to Romanian banking system is not very high, but is important (Figure 2). Relative to the size of the domestic banking system and domestic economy, foreign bank presence in Romania is significant, having a strong impact on domestic developments.

5. Money market developments

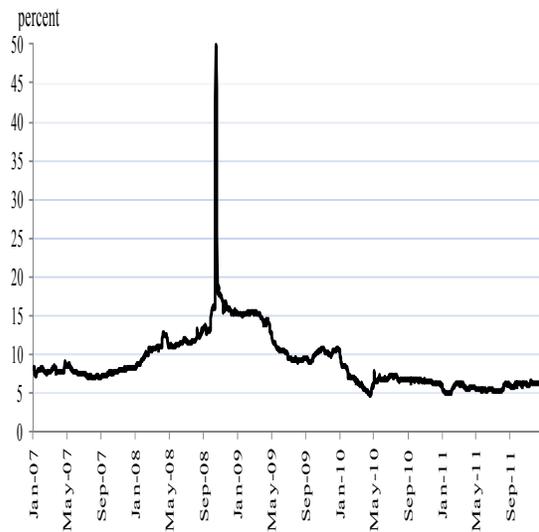
In Figure 3 can be observed the EURIBOR3M interest rate dynamic (with a three months maturity) on euro area money market. EURIBOR3M interest rate has decreased significantly on lower monetary policy interest rate conducted by the European Central Bank, but financial turmoil triggered volatility spikes. Financial shocks were induced in the first place by global financial developments, and afterwards by the euro area sovereign debt crisis.

Figure 3: The dynamic of interest rate on euro area money market with 3 months maturity (EURIBOR3M)



Source: Deutsche Bundesbank

Figure 4: The dynamic of interest rate on Romanian money market with 3 months maturity (ROBOR3M)



Source: National Bank of Romania

The interest rates on Romanian money market grew strongly at the onset of the global financial crisis (October 2008) amid the contagion from global financial markets (Figure 4). To remedy imbalances in the money market (interest rates on money market had highly exceeded lombard interest rate that banks pay to attract liquidity against collateral from the central bank), National Bank of Romania imposed a temporary ceiling for money market interest rates equal to the interest rate on lending facility (lombard interest rate) provided to banks. The administrative measure has generated a rapid decrease in money market volatility, but concerns were raised regarding the restriction of free market mechanisms for determining interest rates. In exceptional cases the money market interest rates may be higher than the lombard interest rate if banks do not own enough collateral eligible for market operations with the central bank or prefer to borrow in the interbank market to avoid the so called stigma effect. Volatility of money market interest rates rose again in May 2010 due to uncertainty regarding Greek government ability to repay its debt, but stayed below the level reached in October 2008.

Volatility of money market interest rates EURIBOR3M and ROBOR3M during 2007 - 2011 is analyzed using EGARCH type models (Exponential Generalized AutoRegressive Conditional Heteroskedasticity) that implies that changes in volatility in financial and economic time series can be predicted because of a non-linear dependence between current and past volatility rather than structural changes that can occur for the exogenous variables. EGARCH models identify volatility clusters and captures asymmetric turbulences that cannot be detected with GARCH models. EGARCH (p, q) models have been introduced by Nelson (1991) and are defined as following:

$$\varepsilon_t = \alpha_1 \varepsilon_t \quad \text{(Equation 1)}$$

$$\log(\sigma_t^2) = \alpha_0 + \sum_{i=1}^p \alpha_i g(\varepsilon_{t-i}) + \sum_{j=1}^q \beta_j \log(\sigma_{t-j}^2) \quad \text{(Equation 2)}$$

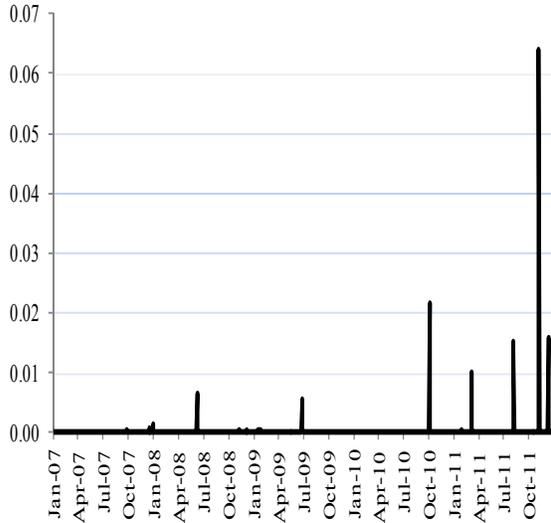
$$g(\varepsilon_t) = \theta \varepsilon_t + \lambda(|\varepsilon_t| - E(|\varepsilon_t|)) \quad \text{(Equation 3)}$$

Where $\varepsilon_t = \frac{r_t}{\sigma_t}$ is the normalized residual series and σ_t^2 is the conditional variance.

Based on EGARCH (1,1) estimations, the conditional variance of EURIBOR3M and ROBOR3M money market interest rates are presented in figure 5 and figure 6. Euro area money market has been more stable than money market in Romania at the onset of global financial crisis. The EGARCH model does not detect strong volatility clusters for euro area money market during October-November 2008 due to the lack of high spikes for money market interest rates, especially for longer maturities such as 3 months. But in Romania the money market interest rates jumped severely because of a sudden liquidity shortage. The volatility cluster detected for Romanian money market during October – November 2008 can be

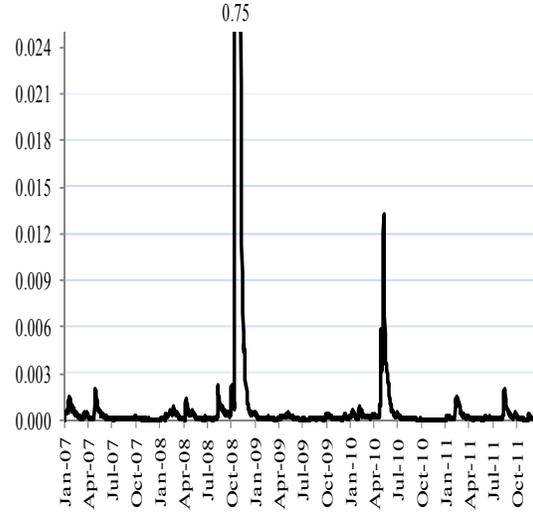
explained also by a lower liquidity depth of the money market compared to the euro area, which allowed a more pronounced jump of interest rates in Romania.

Figure 5: Conditional variance for the interest rate on euro area money market (EURIBOR3M)



Note: Conditional variance is estimated using a EGARCH(1,1) model
Source: Deutsche Bundesbank, author calculations

Figure 6: Conditional variance for the interest rate on Romanian money market (ROBOR3M)



Note: Conditional variance is estimated using a EGARCH(1,1) model
Source: National Bank of Romania, author calculations

Euro area sovereign debt crisis has impacted both the euro area and Romanian money markets, but the volatility for the euro area was more pronounced. With the real economy relatively stable and an adequate liquidity level within Romanian banking system, the financial shocks transmission from the euro area to the domestic money market has been limited. The high frequency of periods with high volatility in the money market of euro area underscores the gravity of the imbalances in the European banking system, especially since the onset of sovereign debt crisis, while money market in Romania partial decoupled from the external developments.

To determine the degree of correlation (statistical dependence) between the euro area and Romania money markets (for interest rate returns, interest rate conditional variances and interest rate standard deviations), it is used the non-parametric Spearman correlation. The coefficient for Spearman correlation is calculated using the formula:

$$r = \frac{\sum_{i=1}^n (R_i - \bar{R})(S_i - \bar{S})}{\sqrt{\sum_{i=1}^n (R_i - \bar{R})^2 \sum_{i=1}^n (S_i - \bar{S})^2}}$$

The indicator takes values into the interval [-1, +1], where -1 corresponds to perfect negative correlation between the variables x and y, +1 shows a perfect positive correlation between the variables and 0 rejects correlation between the variables. The statistical significance of the Spearman correlations is tested using the t-Student test.

Spearman correlation indicators between the money markets in Romania and the euro area are calculated for three variables: nominal yields of ROBOR3M and EURIBOR3M interest rates, standard deviation of ROBOR3M and EURIBOR3M interest rates and conditional variances estimated with an EGARCH (1,1) model for ROBOR3M and EURIBOR3M interest rates. The Spearman correlation values (yearly and for the entire sample period), including their statistical significance (p values for the t-Student test) are posted in Table 1.

Table 1: The daily correlation between the money markets from Romania and euro area

Year	Nominal returns		Conditional variance – EGARCH (1,1)		Standard deviation	
	Spearman correlation	P value	Spearman correlation	P value	Spearman correlation	P value
2007	-0.08349	0.1838	-0.32296	1.2609E-007	-0.40591	9.801E-011
2008	0.15349	0.0136	0.34361	1.4634E-008	0.22061	0.0004
2009	0.16815	0.0068	-0.11857	0.057171	-0.21087	0.0007
2010	0.23047	0.0002	0.17031	0.006	-0.15283	0.0138
2011	-0.03331	0.5943	-0.12077	0.052678	-0.11531	0.0644
2007-2011	0.07756	0.0053	-0.033257	0.2328	-0.048375	0.08509

Source: National Bank of Romania, Deutsche Bundesbank, author calculations

Empirical results do not identify a robust pattern for the correlation between the money markets of Romania and the euro area. Interest rates yields (nominal returns) tend to be slight positively correlated in most years analyzed, including for the entire sample period (2007-2011), while the correlations for both conditional variance and standard deviation are rather negative. Most of the p values for t-Student test reject the null hypothesis for a 5% significance threshold; therefore the majority of estimated Spearman correlation coefficients are statistically significant.

The highest positive correlations between conditional variances and between standard deviations were recorded in 2008, the year of the onset of the global financial crisis. In addition, the correlation between conditional variances (estimated with a EGARCH (1,1) model able to detect volatility clusters) was higher compared to the correlation between standard deviations. All these evidences emphasize a possible contagion effect from the euro area money market to the Romania one at the onset of global financial crisis, but also a relative decoupling between the two money markets since 2009. The economic stabilization, a banking system funded with the needed liquidity and different developments for monetary policy interest rate in Romania, all seem to sustain this partial money market decoupling from the euro area.

The figures for 2011 and the entire sample period (2007 – 2011) show low Spearman correlation, while their p-values for t-Student are above 5% significance threshold. These results are in line with the low daily correlation observed between Romanian and euro area money markets and the relative gradual decoupling between the two money markets throughout the analyzed period. Correlations for conditional variances and standard deviations tended to follow a downward path, especially in the last 2 years (2010 and 2011).

6. Conclusions

As an EU member, Romania has a banking system dominated by foreign capital investments, mainly capital coming from the euro area. Therefore, Romanian banking system was in the very process of convergence to the European banking system at the onset of the global financial crisis (October 2008). The European financial market turbulences were transmitted by contagion to Romanian financial markets, where banking system capital linkages and the investor's expectation regarding future developments acted as transmission channels.

Volatility of interest rates in the interbank money market reflects both credit and liquidity risks within the banking system, as well as the confidence among the banks. Volatility has increased significantly in the Romanian money market at the onset of global financial crisis and continued to be unstable during euro area sovereign debt crisis. Notwithstanding, the volatility on money market remained below the level reached in October 2008.

Using an EGARCH model (that detects volatility clusters) and Spearman correlations for the analysis of interest rate volatility within Romanian and euro area interbank money markets, the empirical results reveal contagion from the euro area to Romania at the onset of global financial crisis, but also a relative decoupling from euro area money market during the euro zone sovereign debt crisis. A possible explanation for the partial decoupling may be the economic stabilization, adequate liquidity funding for the banking system and different developments of the monetary policy interest rate in Romania compared to the euro area. However, Romanian interbank money market remains sensitive to the euro area dynamics, therefore the contagion risk stays elevate in the context of the ongoing integration process of Romanian banking system into the European one, but also considering the global tension persistence.

7. Acknowledgments

This work was co-financed from the European Social Fund through Sectoral Operational Programme Human Resources Development 2007-2013, project number POSDRU/107/1.5/S/77213 „Ph.D. for a career in interdisciplinary economic research at the European standards”.

8. References

- Aiyar, S. (2011) How did the crisis in international funding markets affect bank lending? Balance sheet evidence from the United Kingdom, *Working paper series, Bank of England*
- Beirne, J ;Caporale, G.M.; Schulze-Ghattas, M.; Spagnolo,N. (2009) Volatility spillovers and contagion from mature to emerging stock markets, *Working Paper no. 1113, European Central Bank (ECB)*
- Cetorelli, N.; Goldberg, L. (2011) Liquidity management of U.S. global banks: internal capital markets in the great recession, *Working Paper no. 17355, National Bureau of Economic Research (NBER)*
- Detragiache, E.; Gupta, P. (2004) Foreign banks in emerging market crises: evidence from Malaysia, *International Monetary Fund (IMF)*
- Dinger, V. (2009) Do foreign-owned banks affect banking system liquidity risk?, *Journal of Comparative Economics*
- Forbes, K.; Rigobon, R. (2002) No contagion, only interdependence: measuring stock markets co-movements, *Journal of Finance, vol. 57, no. 5*
- Haas, R.; Lelyveld, I. (2006) Internal capital markets and lending by multinational bank subsidiaries, *DNB Working Papers no. 101, De Nederlandsche Bank*
- Nelson, D. (1991) Conditional Heteroskedasticity in asset returns: a new approach, *Econometrica, vol. 59, nr. 2*

THE RECOVERY TERM'S CONTRIBUTION TO THE IDENTIFICATION OF VALUE LOSSES FROM THE USE OF FIXED ASSETS

MANEA Marinela – Daniela

Ph. D. Assistant professor, Faculty of Economic Sciences, Department of Accounting – Finance, Valahia University of Târgoviște, Târgoviște, Romania, m_manea7@yahoo.com

Abstract: *The paper sets out to identify a mathematical pattern through which a user of financial situations should be able, after a simple document analysis, to model an indicator, working tool available to all Romanian professional accountants concerning the implementation of the provisions of international accounting standards (IFRS). The action was initiated out of the necessity to promote within the Romanian accounting space and practice some aggregates which would help the professionals within the domain to further study and implement the provisions of international norms and the European Directives currently in force.*

Keywords: recovery term, value loss, fixed assets, cash flow, discount rate.

JEL classification: M 41

1. Introduction

The Romanian accounting in line with the International Accounting Standards and the European Directives needs new practices and techniques that can ensure a better implementation of the provisions of the norms and regulations for the benefit of the entities and their management. In this context, without neglecting the existences within the Romanian accounting practice, strongly influenced by a traditional current, we set out, after the long analysis of the particularities of the IAS 36 norm “Asset depreciation” (IFRS 2011), to identify a mathematical model that will help us quantify the value losses from the use of fixed assets. This also came as a consequence of the diversity of elements that must be modeled and estimated, in need of approximations that are not easy to carry out by the Romanian practitioners. The object of the current study is to go through the theoretical steps of implementing the proposed mathematical model, managing, at the same time, to identify a risk zone in order to move from a simple indicator for investment recovery to an index of value loss appreciation.

2. Literature Review

According to the international regulations, the identification and recognition of a loss from depreciation for the individual assets/cash generating units, is realized by implementing the depreciation test according to IAS 36 “Asset depreciation” (IFRS 2011). The provisions of the above mentioned norm consider that an asset is depreciated at balance sheet time, when its accounting net value outruns the recoverable value. As it is already well known, IAS 36 norm measures the recoverable value opting between two values – the fair values minus the selling costs, respectively the use value – in the variant of the maximum of the two. If the fair value minus the selling costs can be measured with enough certainty – most of the times it is the result of the transactions carried out on the market between informed persons, that is advised, competent and independent persons, condition for the objective assertion of a price – however, the use value is rather the result of estimations, both of the future flows generated from the use of that specific asset and of the attached discount rate, which gives it a high degree of subjectivity.

Furthermore, the professional accountants within the entity are the ones who, according to the exploitation conditions of the asset and its use for society provide the measure for the use value and therefore similar assets used by different societies have different use values. In this context, since it is well known that the implementation of the concept of recoverable value by the Romanian professional accountants over the individual fixed assets is quite difficult, our initiative enlists in the action of identifying the assets’ value loss at the level of cash generating unit/ entity regarded as a whole, as fitting.

3. Metodology

3.1. The context and the objectives of the research

From the above we understand that the measure of the value use is not entirely easy to realize also as a consequence of the various necessary estimations: the ones afferent to the future flows attached to the asset in use, which requires that the entity elaborates provisions and prognosis for realist periods of

time, not bigger than five years, respectively choosing a discount rate fitting for the estimated cash flows. Since most times it is difficult to estimate in practice the use value and implicitly the recoverable one for each asset individually (also a consequence of the impossibility of elaborating financial and detailed provisions and prognosis for each asset individually), IAS 36 introduces the notion of cash generating unit through the international regulations. The cash generating unit (IFRS, 2011) is considered to be the asset ensemble that generates together cash flows from use independent of the cash flows from other assets or groups of assets, whose production can be transacted on an active market. Since it is the resultant of the professional reasoning belonging to each entity, the identification and recognition of the cash generating units in practice is a strenuous process and it is subjected to criticism as a consequence of its high subjectivity. Under these circumstances it is easy to understand that in practice the assessment and recognition of the losses from depreciation according to IAS 36 "Asset depreciation" is, at least for a moment, a *Fata Morgana* of our accounting.

Given the circumstances, the following questions arises: how could a user of a society's financial situations identify the possible losses from depreciation for the fixed assets without even implementing the thicket of the estimations given by the paragraphs of the IAS 36 norm "Asset depreciation". Could an external user of the financial situations recognize, after a simple analysis of the data published by the entity, the losses from the depreciation attached to the assets constituent of the society? Here is our approach which we will further present in detail.

3.2. The method

The method of assessing a fixed asset starting from the estimations of the future cash flows attached to it is a reference tool in measuring any asset in finances, practice that has also extended to accounting at the same time with the implementation of the IAS/IFRS norms. Within finances, the appreciation of an investment's project's profitability is realized by calculating the updated value of the future cash flows generated by that project and the analysis that entails with other projects; the bigger the updated future flows will be than the invested capitals, the more efficient the investment project will turn out to be. The financial theory did not find more reliable criteria for selecting the investment projects, other than maximizing the *net current values* (respectively the difference between the investment's actual value and the invested capital), rather opting for maximum net current values; another way of measuring the profitability is to determine the recovery term (updated estimate) of the investment project.

The recovery term (Stancu I., 1997: pg. 296) of the sum allotted for investment expresses the number of years of recovery through the updated annual medium cash flows ($CF_{act/an}$) of the invested capital (I_0) and it is determined according to the relation:

$$T_r = \frac{I_0}{CF_{act/an}}$$

The objective of this study is to prove that, by acting through certain modeling and methodological restatements on the arrays of the cash flows, respectively on the balance sheets published by the entities, enough information is provided which allows an external analyst to identify, through calculating the recovery term, an index for the possible value losses attached to the fixed assets. Based on the data published by the societies (balance sheet, profit and loss account, the cash flows' state), it is necessary that restatements are carried out at the level of the cash flow, respectively in the delimitation of the economic asset which allows the calculation of the recovery term. This expresses in cash flows years the measure of the economic asset's recoverability. Provided that the recovery term is situated farther in time, this is a clue that the society's assets are depreciated.

The proposed study goes through several steps, from which we mention the realized and structured modeling at least in the following four:

- projecting and updating the cash flows;
- the measurement of the entity's economic asset;
- the identification of a risk zone in order to move from a simple indicator of investment recovery to an index of value loss appreciation;
- the sample and results interpretation.

Out of the four steps the first three constitute the object of the current study, while the last one will develop in a future extensive approach, pursuing the mathematical model's testing both at the level of the entities within Romania and Europe.

4. Results

4.1. Projecting and updating the cash flows

The external analyst, in his action to identify, starting from the cash flow panel, a free cash flow indicator, reportable to the economic asset, will be able to opt for a foresight for a series of cash flows according to the DCF method – Discounted Cash Flow, for a prognosis period of time of at least 5 years. An adequate discount rate is applied to these series of predicted cash flows, either starting from the capital's medium weighted cost, either derived from the market, in order to establish the flows' updated value.

The steps of applying the updated cash flow method are:

- The expected incomes are estimated for a certain time span (for example, for a year);
- The measure and the periodicity of the expected gross income (the sales figure) is determined, as well as their seasonality
- The measure and the periodicity of the expenditures related to the realization of the expected annual gross incomes is determined;
- The discount rate is determined;
- The updated value of the net annual cash flow is calculated.

In the development of the before mentioned steps, the external analyst will have to apply a series of modeling and specific restatements such as:

- a) in order to ensure a high credibility of the data obtained, in a first phase, the estimation of the expected gross incomes targets modeling for 12 months, thus the total expected gross incomes will materialize under the figure business sale generated by the entity from the use of their own fixed assets;
- b) subsequently, the total annual gross incomes' forecasting will be performed for the chosen prognosis interval, 3-5 years;
- c) when estimating the expected annual exploiting costs, the external analyst will take into account all the costs related to the realization of the expected gross incomes (here may also be included elements such as the *sold merchandise's cost*, which differs from the exploiting costs; however, elements such as interest rates and repayment rates for the long term loans will not be categorized as expenditure elements);
- d) from the expected annual gross incomes we subtract the expected annual exploiting costs, thus obtaining the annual exploiting gross profit which the assets will generate during the expected period.

Then the net cash flow is calculated, after taxing, as it follows: Gross profit from exploitation *minus* income tax *equals* the net profit from exploitation *plus* the amortization and other non-cash expenditures *equals* gross cash flow *minus* the capital expenditures (investment flow) *minus* the annual increases *plus* the annual decreases of the floating capital *equals* **the net cash flow at the disposal of the invested capital** (EBM Module 101)

For calculating the net cash flow at the disposal of the invested capital, there must be added, to the net profit from exploitation, calculated according to the above mentioned categorizing, the annual amortization, the annual capital expenditures as well as the annual modifications of the floating capital. By adding the amortization to the net profit from exploitation results what is often called **gross cash flow**. Regarding the annual capital expenditures to retain the totality of the investments realized by the society is absurd, since here are also integrated elements of external growth, such as revenues and payments from instruments of individual capital afferent to other societies, revenues and cash payments from loans made by other parties and it makes it impossible to achieve our study's goal – that of appreciating the performance of an entity, starting from the present free cash flow capable to ensure its recovery, through "decent" terms of its economic asset. In other words, in the estimation of future cash flows, the society will take into consideration only the expenditures necessary to maintain the asset (be it individual, cash generating unit or the economic one in its integrity) at the initially requested level of performance, because, without performing these expenditures, the measure of the estimations regarding the future cash flows loses its relevance, since the asset is no longer capable to produce at the stipulated level. Therefore, the future cash outflows which will enhance the asset's results or the related cash inflows which are expected to be generated by these outflows will not be taken into consideration. The measurement of the cash flow attached to the investments activity in our opinion will be given by the *net* sum obtained from the operations regarding the *maintenance* investments. It will be considered and retained as *net* flow of

the *investment* activity the *sum of the amortization afferent to existent assets*. This choice is not simply justified by the reasoning of commodity, but it is rather based on the observation according to which on a longer period of time, the fixed assets are entirely amortized, and the sum of the amortizations corresponds to the value that will be reinvested by the society in order to maintain the productive potential at the initially estimated performances.

In conclusion, *the future annual capital expenditures (investments)*, in the case when a sale figure increase is expected, will be bigger than the annual amortization. If a sale figure increase is not expected, the most adequate hypothesis is ***the equality between the annual capital expenditures and annual amortization***.

e) the annual modifications of the floating capital represent the sum that the society will allot for increasing the floating capital for exploitation, from one year to another.

f) the adequate discount rate of the net cash flow available to the invested capital is the capital's medium weighted cost, respectively the medium weighted profitability solicited by the two capital providers: the investor of the capital itself and the long term creditor. As a general rule, every time it is possible, the discount rate is taken from the market.

g) the updated value of the net annual cash flow is calculated.

Thus, in the action we started it has been outlined the modeling of the future updated cash flows that will be compared to the economic asset in order to calculate the recovery term – measurement index of the society's assets' underevaluation.

4.2. The measurement of the entity's economic asset

In the measuring of the economic asset we will start from presenting the accounting balance sheet – the list format, which on the one hand outlines, at the beginning of the presentation, the accounting asset, respectively the indebtedness (both on a shorter and longer period of time) and the individual capitals in the second section. The considered asset is not the accounting one, usually used by the professional accountants, but rather the asset corresponding to the capitals invested by the society.

The asset called economic will amount the totality of the net investments – except for the amortizations and value losses, performed by the society, in fixed assets such as intangible, tangible assets as well as the net sum of the investments in need of floating capital (the need of floating capital is assimilated to an investment within the entity's exploitation function). To the above mentioned elements we can add the availabilities, in the practitioners' optic (Niculescu, 2003), since they use the notion of *net global economic asset*.

From the presentation model of the economic asset, it can be remarked that it only varies according to the sum of the investments performed (in fixed assets or in the need of floating capital), aggregate that can be subjected to an accounting recoverability logic:

- the fixed asset starts, according to the new international accounting regulations, from the future cash flows estimated for the considered usage period of time;
- the asset which needs floating capital starts from those elements on short period of time easy to transfer in the treasury and cash equivalents, in this case the stocks, trades towards clients, respectively debts towards the providers.

After all, our attempt to test the recovery ability of the society's economic asset, starting from the cash flows generated from the activity, highlighting with its entire transparency its size at a given point, only represents the identification of how many cash flow years are necessary to consider as recovered the assets' sum in this or that cash generating unit.

If we admit that the economic asset represents the sum of the capitals invested by the society, the practical delimitation of this aggregate can be realized either by starting from the active components of the balance sheet (*economic asset = fixed assets + the need for floating capital*), either according to the incidence of two passive components – *personal capitals*, respectively *indebtedness* through debts recognized at a given moment. Since the external user has enough information to outline both aggregates, any of the two given variants can be chosen.

If we start from the elements of balance sheet liabilities, the economic active is, in fact, the sum of personal capitals and debts (which carry interest) of an entity, also known as indebtedness. These passive components reflect the financial methods – in personal respectively attracted funds – used by the entity to obtain its assets. The indebtedness will include, besides the sums that carry interest, all those exploitations passives whose payment has been postponed, stressing the free finances in the first stage, the corresponding asset is thus reintegrated in the need of exploitation floating capital.

We opted in our study to a *medium economic asset* resulted as an average between the economic asset from the beginning of the exercise and, respectively the one from the end of the reporting term.

4.3. From the economic asset's recovery term to the measurement of its profitability

The recovery term previously measured as an equivalent of the economic asset's recovery of a society in "cash flow" years can be considered as a control criteria of the realized investment – in our case the society in its entirety. In specialized literature it is also known as pay back ratio and it reflects retrospectively, through comparison to other similar projects, the entity's choice in selecting an investment portfolio, thus it will be favored that investment that will bring immediate liquidities compared to the ones that carry value on a long period of time, characterized by uncertainty and multiple risks.

And, although our report may be characterized by the inconvenience of the modeling of some aggregates that apply the creative accounting's techniques, at all agreed upon within the Romanian space, still the economic reality proved that a possibility for the challenges that the traditional managerial systems encounter could be the implementation of the management based upon value. The central idea of the system creating share value is the cost of the capital invested, in relation to which the performance of entities is judged. This is motivated by the fact that an obtained result has no value on its own, but only by comparing it with the resources or the capitals invested in an entity by shareholders and creditors, but also with the cost of such resources. The notion of value creation is anticipative and sees the result obtained in prospective and in a comparative manner. The performance scored on the goods and services market – in entity, may be permanently compared with the one offered on the capital market.

Thus, given the dynamics which characterizes the current economic background, the value-based management seems to be most adequate management philosophy, by proposing instruments for measuring performance at different organizational levels – both at the level of the whole entity and of the project – so that the investment and disinvestment strategies must be modified, by taking into account, as reference point, the principle of shareholders' fortune maximization, while the capital structure and dividend policy shall be established according to the way in which value is created for shareholders, and not by pursuing to increase the income safety.

Another inconvenient can also be the observation that our recovery term presents discontinuity ruptures. Thus, the following can be ascertained: as long as the positive cash flow inclines in its development towards zero, the recovery term becomes lengthier and vice versa. Alternatively, if the cash flow is negative, the negative recovery term most detrimental for the society will be the one situated close to zero. The following example is given: a cash flow of 1 is estimated, respectively 1,5 reportable to an economic asset of 50 u.m, which generates recovery terms of 50 years, respectively 33,3 years, the differences are significant at the first analysis.

The gap can be less significant if we reverse the reports terms and we transform the recoverability term in an economic profitability ratio such as ROCE. In profitability terms, the difference is almost imperceptible, from 2% to only 3%. And, although the recovery term lacks the advantage of inclining towards zero or to be proportionally negativ with the value losses attached to the actives, its calculation deserves, in our book, to be measured and interpreted.

5. Result interpretation

To move from reading a recovery term of the economic asset to measuring detraction index of the assets requires, undoubtedly, the identification of a risk zone, given by the perimeter of our study. Two spheres of action can be distinguished:

- one of them refers to the global risk of the depreciation of the entity's economic asset, initiative that began, as it was previously seen, from the study of the published financial situations;
- the other one refers to the risk of depreciation of the individual assets, respectively of the ones grouped in cash generating units, where the data is not available for third parties.

Hereinafter we will focus on identifying the global risk of depreciation of the economic asset in its entirety, although there are certain limitations.

Thus, a recovery term of the economic asset of 3 or 4 years, which, in our book, stands for a safety level, can coexist with a recovery term of the assets grouped in cash units bigger than 20, 25 years, situation that is quite difficult for the society. Moreover, if the recovery term of the economic asset is big enough, in 20 years for example, this represents an index according to which the component assets of the cash generating units are undoubtedly depreciated. *One can start from reading the recovery term in*

order to warn the entities to revise the recoverability policy for the assets grouped in cash generating units.

The global recovery term can be applied to the entities within various domains whose duration and life cycle substantially differ from one to another. This is why we will try to put in relation for an infinite duration the economic asset's recovery term and, respectively the development of the cash flow induced by it. If we take into consideration a weighted average cost of the capital of 8%, a recovery term of 20 years reflects an evolution towards infinite of the free cash flow of 3%, which already represents an objective easy to obtain. Furthermore, we must take into consideration the fact that the economic asset also includes, besides the fixed assets, the asset that needs floating capital whose recovery term must be realized on a short period of time in order to be accepted from an accounting point of view. If, for example, the need for floating capital represents 10% of the economic asset, a recovery term of 20 years implies a recovery of the fixed assets in 18 years and respectively 0,2 years for the assets that need floating capital.

Starting in our calculations from a cost of personal funds of 8%, percentage that is undoubtedly small in comparison to the shareholder demands, it can be considered that ***a recovery term of at least 5 years represents an index of global value depreciation/loss for the assets.***

6. Conclusions

Without a shadow of a doubt, our value loss indicator could undergo criticism – it is the result of the estimations and modeling specific to the creative accounting, and especially within the Romanian accounting space it will encounter a series of hindrances such as:

- quite a precarious theoretical study and reflection of the alternative assessment methods in accounting;
- the precarious market information;
- the professional accountants' opacity and lack of vision;
- the current Romanian accounting system's reduced capacity to apply the creative accounting, since the state of dialog between the accounting norms and the accounting policies remains unidentified, between the liberty of choosing accounting procedures and the obligation to provide the users relevant and credible information.

However, this annual recovery term, otherwise easy to calculate for the external analyst, does not focus on being more or less fair – it is, unquestionably, subjected to limitations – but rather to be an “alarm signal” for the entities' management; the identification of an alarming value of the respective indicator needs a careful analysis from the societies precisely in order to remove the suspicion of a hidden value loss afferent to the assets. Since it is easy to measure, the indicator is useful both for the society's partners and for the supervisory bodies within it, which have an extra working tool in their attempt to adjust as well as possible to the ever changing economic conditions.

7. Acknowledgements

This work was cofinanced from the European Social Fund through Sectorial Operational Programme Human Resources Development 2007-2013, project number POSDRU/1.5/S/59184 “Performance and excellence in posdoctoral research in Romanian economics science domain.”

8. References

- ANEVAR (2004) *Approach in to the evaluation the mobile assets*, Module EBM 101;
- IASB, (2011) *International Financial Report Standards (IFRS). Official norms issued on January 1st 2011*, translation, CECCAR Publ. House, Bucharest;
- International Financial Reporting Standard (IFRS) (2009) *IFRS for Small and Medium Enterprises*, pentru Small and Medium Enterprises (IMMs), CECCAR Publishing, Bucharest;
- Niculescu M., (2003) *Diagnostic economic*, Economic Publ. House, Bucharest, p. 141;
- The Order of the Public Finances Ministry No. 3.055/2009 on the approval of Accounting regulations conform with European directives, published in the Official Gazette No. 766 bis/10.11.2009

BASEL III - THE STABILITY OF FINANCIAL SYSTEM

MARIN Cornelia

Ph. D. Student, Faculty of Economics, Academy of Economic Studies, Bucharest, Romania, cornelia_marin2005@yahoo.com

Abstract: *The purpose of Basel III is to reduce the ability of banks to damage the economy by taking on excess risk. It fixes many of the shortcomings of micro-level supervision, but it also incorporates the broader system wide lessons and introduces a macroprudential overlay to the regulatory framework. Taken together, these measures should make the system more stable over the long run, thus raising economic growth over the cycle. The purpose of this paper is to analyze how European banks will respond to Basel III, respectively, the impact upon the Romanian banking system. If at European level it is estimated a substantial deficit in capital and liquidity, with major impact on profitability indicators, the impact of Basel III upon banking in Romania is considered to be limited. The current financial crisis has shown us that the role of central banks in this relationship is crucial in order to avoid economic imbalances and achieve high levels of economic activity.*

Key words: banking system, financial stability, Basel III, systemic risk, capital adequacy

JEL classification: G 01, G 21, G 32

1. Introduction

Considering that the financial crisis experience has proved the importance of the bank capitalization, regulatory authorities plan to force banks to implement more strict capital rules. Basel III was developed specifically to reduce the frequency and intensity of financial crises. Studies indicate that the agreement will reduce the economic costs of crises.

The experience of current crisis has proved that banks which were properly capitalized in relation to risk level managed to end 2009 in terms of profitability. Worsening conditions and the substantial increase of recorded outstanding loans were certainly factors that put banks in the position to have significant losses. But the banks that have respected the Basel II provisions concerning the capital adequacy, could better manage these losses having necessary resources.

The capital increases which we have seen since the crisis started were requested, in many cases, by regulatory authorities. The control of banks capitalization has become one of the priorities of the regulatory authorities, and so capital rules will become increasingly stringent, and their compliance will be closely monitored, which may lead us to think of a banking system consolidation, banks being prepared to a possible worsening of economic conditions in the future.

Committee on Banking Supervision in Basel, which is composed of central banks and regulatory authorities from almost 30 countries, has established a set of strict financial regulations, in response to the credit crunch. The new set of measures strengthens the system of rules and supervision from banking industry and is designed to significantly reduce the probability and severity of economic and financial instabilities. Banks will be asked to raise both the level and quality of capital to new heights, but in a manner which will promote stability of national banking systems. The imposition of some bigger obligatory minimum reserves for banks can help to avoid collapses such those occurred in 2008 which led to precipitate crisis and massive support from the part of the state in several great economies.

Committee will maintain a plan of gradual implementation of these rules starting with this year, but will give banks a transition period to support them to perform it. The measures will be detailed until the end of this year and implemented in a testing period.

In a broader sense, financial stability has to be approached as a situation in which the financial system can provide the efficient assignment of savings towards investment opportunities and can face shocks, without major disturbances. In a narrow approach, more useful for central banks, financial stability can be defined as a situation characterized by the absence of banking crises and by the existence of a certain level of asset prices' stability, including the stability of interest rates. There is general consensus according to which central banks have a fundamental role in providing financial stability, even if there are no rules or patterns that include a way of fulfilling this process. And when analyzing this process economic science must always be doubled by intuition.

Safeguarding financial stability – namely the resilience of a financial system to risks and vulnerabilities – is particularly important because it reduces the production of certain shocks to the

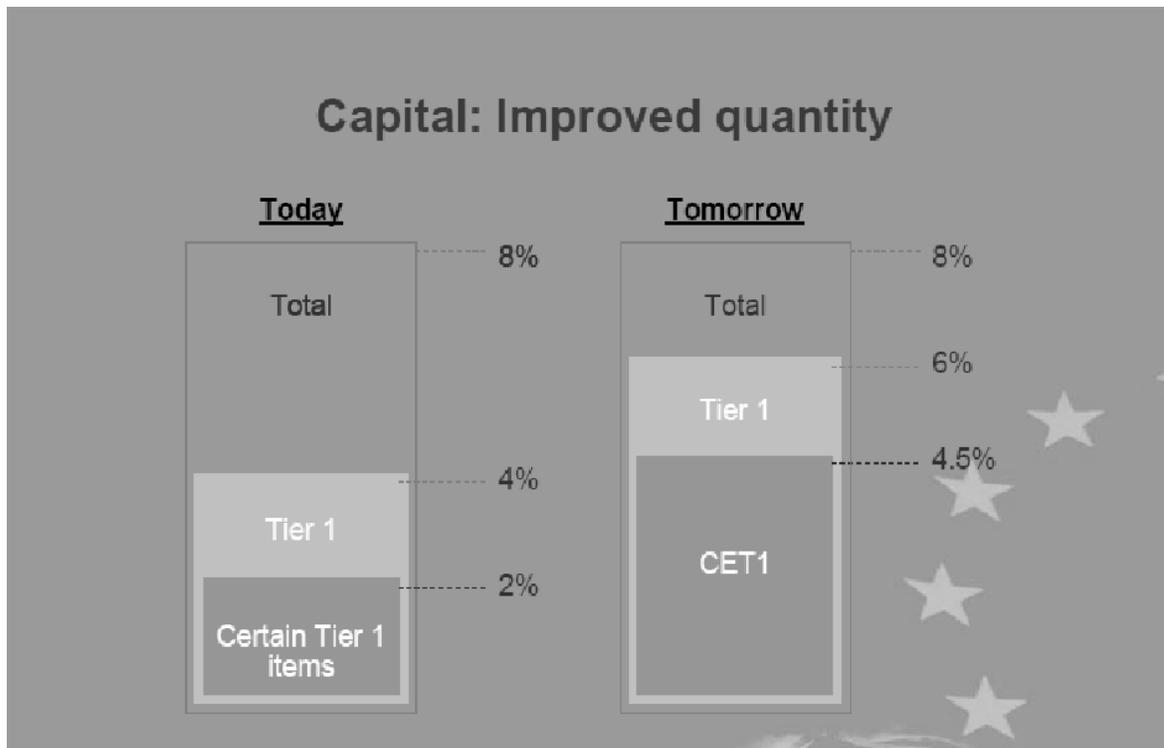
financial system or of financial imbalances. Contrary, it can lead to disruptions in the financial intermediation process, which are disorders sufficiently serious disorders to affect the allocation of savings and of profitable investment opportunities.

A financial system is part of a larger economic, social and political system. It is affected by economic, social and political developments, and, at its turn, affects the performance of the economy and the well-being of society, in general.

The new standards have to improve risk management, increase transparency and publication requirements of credit institutions and problems systemically important banks. The measures require, first, higher standards for banks regarding capital adequacy, liquidity requirements and leverage effect, the main goal being to reduce the negative effects of financial crises. According to the initiators of the new agreement, Basel III tries to combine micro and macro-prudential supervision, while being in a framework of risk management at the bank (taken from the Basel I and Basel II) and systemic risk management framework, the banking system level.

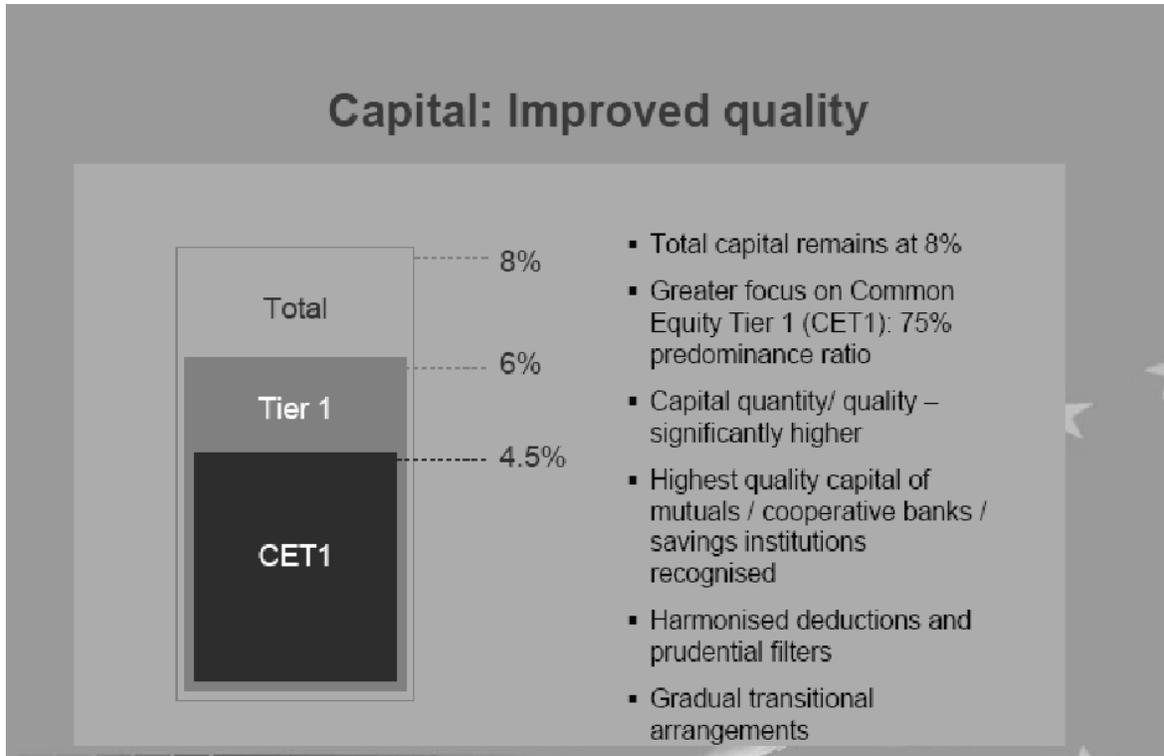
At the micro-prudential level, Basel III brings news for all three components of capital equation:

- *regulatory capital* - Basel III puts emphasis on financing by issuing common shares, reducing the list of financial instruments which constitute Tier 1 capital (tier 1) and remove Tier 3 capital (tier 3). It also inserts stricter rules of transparency in terms of capital.



Source: www.pwc.com

- *Risk-weighted assets* - Basel III includes higher capital requirements for trading activities in financial markets: assets for trading (trading book), products of securitization, credit risk for OTC traded instruments (derivatives and contracts repo). Therefore, for trading book capital requirements are estimated to increase by about four times compared with those required by Basel II.



Source: www.pwc.com

- *Solvency ratio* - according to the new agreement, banks must hold 4.5 percent of risk-weighted assets capital obtained from issuance of common shares (compared to 2 for Basel II). In addition, banks must hold, all the common shares, an additional (buffer) of 2.5 percent for the conservation of capital, leading to a rate of 7 percent common equity. According to the estimations Committee on Banking Supervision Bank for International Settlements, the new rules lead to an increase (compared to Basel II) by about seven times the capital requirements in the common actions. The new agreement increases the tier 1 capital requirement from 4 to 6 percent and remains at 8 percent minimum capital ratio. Comparison in terms of capital in those two agreements is presented in the table below.

Table 1: Comparison in terms of those two agreements Basel II and Basel III

Percent risk – weighted assets	Capital requirements						
	Common Equity			Capital Tier 1		Total Capital	
	Minimum	Buffer capital	Regulated	Minimum	Regulated	Minimum	Regulated
Basel II	2			4		8	
	equivalent to 1% for institutions multinationals under the new definition of capital			equivalent to 2% for institutions multinationals under the new definition of capital			
Basel III	4,5	2,5	7	6	8,5	8	1

Source: Bank for International Settlements

Basel III introduces the requirement regarding of capital preservation, that banks maintain a capital buffer of 2.5 % of risk-weighted assets, capital composed of common stock issuance. When

capital ratio falls, capital buffer is used to cover losses, and the agreement requires banks to hold a major share of revenues for reconstruction of the capital and imposing restrictions on distribution of dividends, purchase of own shares and discretionary bonuses.

2. How will European banks respond to Basel III?

Consistency, coherence, and uniformity in the application of new standards resonated strongly among European bankers. Concern regarding uniformity in Europe stemmed, in part, from the sheer number of authorities with jurisdiction over banks operating in Europe. Regulators around the world have consistently reiterated their commitment to the evenhanded application of Basel III standards. Indeed, one of the primary goals of regulatory reform on a global scale is to limit scope for regulatory arbitrage by the banks (although the enhanced requirements applied to banks may create entirely new pockets of arbitrage through the shadow banking system). Coordinated action around the world is already proving to be challenging, however, and it may become more difficult over the long transition period.

Regulators in some European countries are moving more quickly than others to establish higher standards, particularly for banks they consider to be systemically important. In October, a Swiss commission concluded unanimously that Switzerland's systemically important banks—Credit Suisse and UBS—should be subject to significantly higher capital requirements than those outlined in Basel III. Regulators in other countries, including the U.K. may also require tougher rules than Basel III. The composition of liquidity buffers under the U.K. liquidity regime that was introduced on the bank of the crisis, for example, is more stringent than the Basel III framework.

The Basel Committee provided long transition periods for implementation to enable banks to build up the new buffers from retained earnings and to take gradual action to mitigate the rise in risk-weighted assets. The main question is whether the markets will give banks the time they need to accomplish this. Regulators in some jurisdictions may demand faster implementation of Basel III standards than the BCBS (Basel Committee on Banking Supervision) has outlined, and they are likely to impose additional capital requirements on banks they deem systemically important. If only a few banks move swiftly to implement the requirements early in response to regulatory or market demands, pressure for the rest to follow suit could build quickly.

A race to early adoption could prove costly, not just for banks and their investors, but for the global economy as a whole. If banks are forced to restrict asset growth to meet the requirements early, the economic recovery may be impaired and the economic cost of implementing new requirements could prove to be higher than expected.

Yet there is already evidence that this dynamic may be taking shape among European banks. In early October, Deutsche Bank successfully completed a EUR10.2 billion rights issue, which it launched in part to meet new bank capital rules and in part to aid in its effort to acquire retail lender Deutsche Postbank. Soon after, Standard Chartered Bank raised GBP3.3 billion in equity capital through a warmly received rights issue, stating that it expected its regulator to demand swift implementation of Basel III and to impose more stringent equity capital and liquidity demands on systemically important banks.

The standards will be increased gradually between now and 2018. The transition period ensures the higher standards can be achieved through earnings retention, de-risking of certain capital markets exposures and appropriate capital raising. Banks that are close to meeting the new standards should move more quickly while maintaining sound credit and lending activities. Those that have a longer way to go can use the full transition period.

Status of Basel III adoption (as of end March 2012) is:

- majority of European countries are in stage two, that the draft regulation was published;
- *SUA* are in the first stage, that the draft regulation not published;
- The most advanced stage of adoption being made by Saudi Arabia, which is in the third stage, or final regulation was published and sent to banks.

Table 2: Status of Basel III adoption (as of end March 2012)

Country	Basel III	Next steps - Implementation plans
Belgium	(2)	(Follow EU process - third compromise text published)
China	2	Draft regulation combines BII, B2.5 and BIII. Public consultation ended in 2011. Final rule expected to come into force in Q3 2012. Will be applied to all banking institutions.

France	(2)	(Follow EU process - third compromise text published)
Germany	(2)	(Follow EU process - third compromise text published)
Italy	(2)	(Follow EU process - third compromise text published)
Japan	3	Draft regulation published on 7 February 2012 - Final rules published on 30 March 2012 - Implementation of final rules (end of March 2013 - In Japan, the fiscal year for banks starts in April and ends in March).
Luxembourg	(2)	(Follow EU process - third compromise text published)
Mexico	1	Final rule expected in Q2 2012.
The Netherlands	(2)	(Follow EU process - third compromise text published)
Russia	1	Draft regulations under development.
Saudi Arabia	3	Final regulation issued to banks.
South Africa	1	Draft amendments to legislation issued on 30 March 2012 for consultation.
Spain	(2)	(Follow EU process - third compromise text published)
Sweden	(2)	(Follow EU process - third compromise text published)
Switzerland	2	Public consultation on draft regulation on Basel III has been finished in January 2012. Decision on final rules text expected until mid-2012. Final SIFI regulation (level: Banking Act) adopted by Parliament on 30 September 2011 - Draft SIFI regulation (level: accompanying ordinances) was published in December 2011; decision on final rule text expected before end-2012.
Turkey	1	Draft regulation expected to be published in mid-2012.
United Kingdom	(2)	(Follow EU process - third compromise text published)
United State	1	Draft regulation for consultation planned during Q2 2012. Basel 2.5 and Basel III rulemakings in the United States must be coordinated with applicable work on implementation of the Dodd-Frank regulatory reform legislation.
European Union	2	Third compromise text (directive and regulation) published by the Danish Presidency on 28 March 2012.

Source: http://www.bis.org/publ/bcbs/b3prog_rep_table.htm

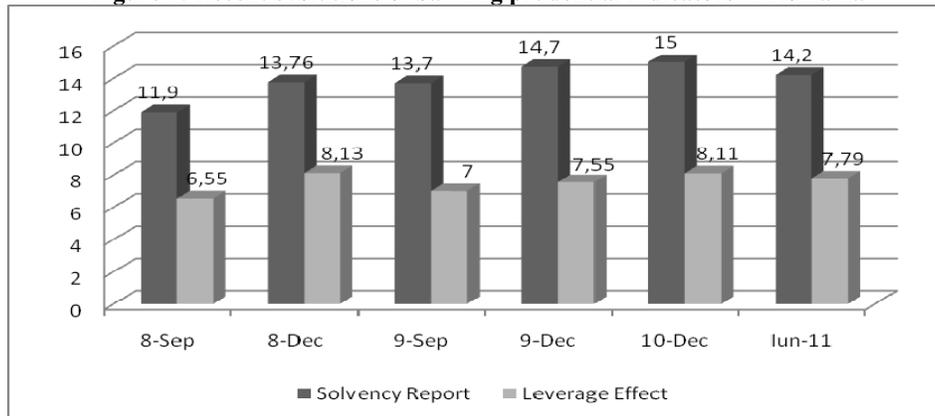
Number code:

1 = draft regulation not published; 2 = draft regulation published; 3 = final rule published; 4 = final rule in force.

3. The impact of Basel III in Romanian banking system

According to the latest development, the Romanian banking system may be assessed as stable in its entirety, enjoying capitalisation, solvency and liquidity levels in line with prudential requirements, despite the fast-paced lending reported over the past several years and the deepening of the global financial crisis. Overall, the levels of prudential indicators did not raise major concern, yet their tendency needs to be closely monitored given the uncertainties surrounding the prospects for global economic growth.

Proactive attitude of the central bank on line banking system increasing resistance to impact, the efforts with credit institutions belonging to shareholders to increase capital base, has ensured that a high level of capital adequacy of banks in Romania. To assess the level of capitalization of credit institutions, central bank solvency ratio used as an indicator currently regulated for this purpose.

Figure 1: Recent evolutions of banking prudential indicators in Romania

Source: Financial Stability Report 2011 and Monthly Bulletins, www.bnro.ro.

The capitalization of Romanian banks is still comfortable (14.2% in June 2011, to 14.7 percent in December 2009 and 15% in December 2010), providing good conditions for further capital requirements Basel III. In this context, all banks in the system had a higher level of solvency requirement minimum of 8%, and 20 of banks exceeded the average of the indicator system. In terms of the minimum 8% regulated, harmonized with the currently applicable EU level is to be deemed to be comfortable.

The leverage effect also illustrates an upward trend, from 6.55% in September 2008 to 8.13% in December 2008, then a downward trend in 2009 to 7% in September 2009 and then stabilized at levels about 8%. Among the factors that contributed to this evolving are: increasing Tier 1 and restricting volume of bank assets for many banks in the system continuing the still uncertain macroeconomic conditions in the period. Under Basel III capital requirements, this will be included in the prudential regulation applicable at Community level. Also, this level will allow banks in Romania requirements for additional capital requirements related to Basel III framework (which include, among others, introduction of two additional segments of capital shock represented by fixed capital preservation and capital cyclical shock) that be undertaken by the European regulatory Capital Requirements Directive IV.

The impact of introducing new Basel III capital requirements on Romanian banking system is considered to be limited. At the middle of 2011, the Romanian banking system level, Tier 1 owns about 80% of total equity and hybrid capital instruments are missing. This structure mitigates the potential impact of implementing Basel III capital requirements.

For reasons of financial stability, central bank decided that the liquidity supervision of branches falls in tasks of the competent authority from host Member State and to have applied the standards of liquidity and the individual level, even if they are met at the consolidated level. Credit institutions will react differently to the new standards, according to the transition period needed to fulfill requirements. If the transition period is shorter, banks may prefer to reduce credit supply for increasing capital levels, changing the structure of assets. Gradual implementation of the new standards can attenuate the impact of banks being able to adapt by capitalization of profits, equity, changing the structure of liabilities.

4. Conclusions

The Basel III framework introduces a paradigm shift in capital and liquidity standards, which was constructed and agreed to in relatively record time. Many elements, however, remain unfinished, and even the final implementation date looks a long way off. However, market pressure and competitor pressure is already driving considerable change at a range of organizations. Firms should ensure they are engaging with Basel III as soon as possible to position themselves competitively in the new post-crisis financial risk and regulatory landscape. Reforms aimed at micro level in order to increase the resilience of individual bank stress periods, respectively, macro-prudential level, in order to reduce the frequency of financial crises. New standards are intended to improve the capacity of the banking sector in absorbing shocks through superior risk management in the details of strengthened governance and increased transparency conditions. Efficient banking Corporate governance, according to the business model and risk profile properly, it is essential for successful implementation of Basel III.

5. References

- Basel Committee on Banking Supervision (2011). *“Basel III and Financial Stability”* Bank for International Settlements, <http://www.bis.org/speeches/sp101109a.htm>
- CFO Research Services *„The Impact of Basel III in Europe”* A supplement to Capital Management in Banking, November, 2010
- Georgescu, Florin *„Banking system and prudential policy of the National Bank of Romania”*, Bucharest, December 11, 2009
- National Bank of Romania. Financial stability Report 2011 and Monthly Bulletin 06/2011
- Walter, S., *„Basel III and Financial Stability”*, Speech at the 5th Biennial Conference on Risk Management and Supervision, Financial Stability Institute, Bank for International Settlements, Basel, 2010, <http://www.bis.org/speeches/sp101109a.htm>
- www.pwc.com , *„The New Basel III Framework: Navigating Changes in Bank Capital Management”*, October 2010

THE DETERMINANTS OF BUDGET DEFICIT IN ROMANIA

MESEA Oana Elena

*Ph. D. Student, Faculty of Economic Sciences, Lucian Blaga University of Sibiu,
Sibiu, Romania, oana.papurica@gmail.com*

Abstract: *This paper empirically analyzes the budgetary, macroeconomic and political determinants of Romania's budget deficit. Using the OLS estimates for a data range from 1995 to 2011, we reached the conclusion that there are some negative influences of real GDP growth and inflation rate on budget deficit and also, that among these two determinants, the one period lagged budget deficit has a direct influence on budget deficit. For the analysed period, the interest rate (either real or nominal) and the electoral cycles as a political variable proved not to be statistically significant determinant variables for Romania's budget deficit.*

Key words: budget deficit, determinants of budget deficit, fiscal policy, Romania.

JEL classification: E62, H 61, H62

1. Introduction

An issue often debated in the recent years is represented by the growth and the persistence of budget deficit over time. The treatment of budget deficit is based on identifying the budget deficit determinants, those variables that have a significant influence on both the size and the evolution of budget deficits. The European Union treats the budget deficit issue with special attention, as the avoidance of the excessive budget deficit procedure is a condition to join the European Monetary Union (EMU) and still remains a condition after the adoption of the euro.

The high levels of budget deficits, as well as, volatile budget deficits have a negative impact on the population welfare from multiple reasons. First of all, a high level of budget deficit or a volatile budget deficit could lead to an inefficient resource assignment and could act as a constraint for the private sector through the crowding-out effect. Secondly, a high budget deficit or a volatile one could lead to an increase of the public debt as share of GDP, which could have a negative impact on the long term fiscal sustainability, affecting the future generation life standard. And not least, higher budget deficit levels, as well as volatile budget deficits could lead to volatile inflation.

Starting from the idea that the literature presents an impressive number of studies and analysis dealing with the determinants of the level of budget deficit, but there are few studies treating the volatility of budget deficit, Agnello and Sousa (2009) stopped to analyse the volatility of budget deficit for a series of 125 countries. They concluded that countries with a higher volatility of budget deficit are those countries with a higher political instability and a lower level of democracy. They proved that a change in governance increases the budget deficit volatility with 15%, while a new signal of a government crisis could lead to a 45% increase, increase that can be magnified by hyperinflation periods. The political regime (democracy versus totalitarianism) and the size of the country (as the total number of inhabitants) are other determinants of the budget deficit volatility. Also, the authors demonstrated that a high level of inflation could lead to an increase of volatility, and countries with a higher budget deficit level (as share of GDP) deal with higher budget instability. On the other hand, rich countries (high real GDP per capita) are considered to have non-volatile budget deficits.

Focusing on the countries from the OECD area, Tujula and Wolswijk (2004) proved that budget balances are affected by variables such as: the change in debt ratio, the macroeconomic conditions, the interest rates, the electoral cycles, the EMU- entry and the asset prices. As a result of running the OLS regressions, the main findings are summarised below: **changes in the government debt, as share of GDP** (debt ratio) in the previous year have a negative impact on the budget deficit, as the budget deficit increases while the debt ratio increases; **the real GDP growth** has a positive impact on budget deficit, the income elasticity of the budget being 0.15; **the nominal long term interest rate** has a negative effect on budget deficit, a one percent increase on interest rate leads to a deterioration of budget deficit of 0.14% of GDP; the **political variables** have a negative impact on budget deficit, as there was a 0.3% increase on the budget deficit in electoral years.

The econometric tests of Woo (2003) showed that financial depth, income inequality, political assassinations, governmental cabinet size, and centralization of budgetary authorities are significant and

robust determinants of budget deficits. Inflation proved to be a significant determinant of budget deficit just only for the case of developing countries.

Galli and Padovano (2002) decided to analyse the determinants of the budget deficit of Italia for the period between 1950 and 1998, starting from the forth budget deficit theories, trying to determine which of these theories has a stronger explicative power:

- i) The Keynesian theory: the budget deficit is positively correlated with the level of unemployment and negatively with the real GDP growth.
- ii) The optimal finance theory: the budget deficit is positively correlated with the deviations of public expenses from their trend and negatively correlated with the deviations of output from its trend.
- iii) The contingent liability theory, which presents the negative correlation between the ageing of population and the budget deficit.
- iv) The public choice theories (the special interests group theory; game theory namely the war of attritions; political budget cycles; budgetary procedures), which sustain that budget deficits represent the equilibrium result of political choices carried out under a set of institutional constrains.

2. The estimation methodology

2.1. Econometric methods of estimation

According to the literature review, the most used methodology to analyze the determinants of budget deficit is the one based on the Ordinary Least Squares Regressions (OLS). The Vector Autoregressive and the Vector Error Correction Mechanism are also used to test if there is a long term relationship and/or a short term relationship between the dependent variable and the explicative ones.

When estimating the determinants of budget deficit, Tujula and Wolswijk (2004) used cross-section panel regressions for a number of 22 OECD countries. Galli and Padovano(2002) estimated an Error Correction Model to analyse the dynamic properties of the existing correlations, as well as the short term and long term relationships between the variables of the model. Woo (2003) analysed a set of economic, political, social and institutional variables for a panel of 57 developed and developing countries over the period of 1970-1990, and estimated regressions using time series and cross-section series. In order to determine the determinant variables of Romania's budget deficit we used the OLS regressions.

2.2. The input variables

The estimation of the determinant factors of budget deficit using the OLS method supposes, first of all, the assessment of the empirical variables. So, it has to be identified the dependent variable as well as the independent ones.

The dependent variable

Choosing the dependent variable represents a challenge as the literature presents a large number of alternative indicators used to quantify the budget deficit. Thus, the **debt ratio** might be used, net or gross, as it is considered to better capture the effects of Government activity rather than the budget deficit does (De Haan and Strum, 1997). However, the public authorities prefer to define their targets in flow terms (**the budget deficits**) rather than in stock terms (the public debt). Also, an alternative for the nominal budget indicators are the **cyclical adjusted variables** (see Perotti and Kontopoulos, 2002), and sometimes even the net interest payments are removed. Another point of view regarding the dependent variable discusses the option to use central budget variables or general government variables. As the general government is a wider concept and has its relevance in the context of the European regulation framework, this is preferred when choosing the dependent variable.

Tujula and Wolswijk (2004) are using for the dependent variable the **nominal general government balance (the conventional balance)**. This choice is based on the availability of data and on the fact that this indicator is frequently checked and targeted by the competent authorities. Anyway, the shortcomings of this indicator should be taken into consideration: the use of this indicator limits the distinction between the discretionary effects of the fiscal policy on the budget deficit (changes in the regulatory politics, discretionary measures of the authorities) and those induced by the objective dynamic of the economy. The authors decided to use **the change of budget deficit as share of GDP**, from technical reasons (in order to deal with stationary series).

Woo (2003) used as the dependent variable **the general government balance** (as share of GDP) instead of state budget balance which represents the central administration budget. Using the state budget

as the dependent variable could be problematic, as a big share of budget deficits form developing countries corresponds to the other part of the public sector (eg: state owned companies).

When defining the dependent variable, Galli and Padavano (2002) considered the fact that this variable should be the one that is controlled by the authorities. In conclusion, they decided to use **the annual nominal value of budget deficit**, defined as the difference between the total amount of public expenses and the total amount of public revenues. Roubini (1991) analyses the data corresponding to 77 developing countries for the period 1971-1982, using as the dependent variable **the average of general government balance** for the considered period, as share of GNP.

The independent variables

According to the literature review, the independent or the explicative variables could be grouped in at least five categories (Tulula and Wolswijk, 2004, Agnello and Sousa, 2009):

1. Budgetary variables;
2. Macroeconomic variables;
3. Political and institutional variables;
4. Demographic variables;
5. Dummy variables.

1. Budgetary variables

a) Change in debt ratio, defined as the debt-to-GDP ratio. This indicator is frequently used when analysing the sustainability of fiscal policy. Increasing debt ratios should lead to an improvement in the budget balance. Anyway the change in the debt ratio may however have a negative impact on budget deficit, as a higher debt ratio automatically causes a rise in interest payments, resulting in a worsening of the budget balance (considered to be the dependent variable). Roubini and Sachs (1989) suggest using the debt ratio as share of GDP, adjusted with changes in interest rate, considering that this adjustment is needed when testing the fiscal sustainability especially in the case the economic growth exceeds the real interest rate.

b) Lagged budget balance. Introducing previous years variables in the econometric estimates is used to correct previous years budgetary disequilibrium, proving that political and budgetary decisions from the past can affect public finances in the following years.

2. Macroeconomic variables:

a) Unemployment rate, economic growth rate and output gap.

These variables measure the answer of fiscal policies to the macroeconomic shocks. The anti-cyclical policies are preferred to the pro-cyclical policies, as the anti-cyclical policies are supposed to stabilize the economic growth around its potential value. (Tujula and Wolswijk, 2004).

b) Inflation rate.

Inflation often is included among the determinants of budget deficit (Roubini, 1991; Agnello and Sousa, 2009; Tujula and Wolswijk, 2004; Woo, 2003). It may have an automatic effect on government revenues and expenditures through the simply price-indexation of revenues and expenditures. Including inflation among the determining variables of budget deficit may be justified by the fact that governments adjust their policies in case of inflation, for instance because high inflation erodes competitiveness and risks causing pressures on fixed exchange rates for countries participating in an exchange rate agreement (Kontopoulos and Perotti, 1999). Also, a high inflation rate goes to an increase in long-term interest rates, having a negative effect on investment and economic growth. On the other hand, governments might also welcome inflation as it reduces the real value of public debt.

c) Long term interest rate.

A high interest rate has a negative impact on the general government balance via increasing the interest expenditures corresponding to public debt. An alternative measure could be the interest expenditures as a percentage of GDP, as the effects of high interest rates on fiscal policies depend on the prevailing debt level (Tujula and Wolswijk, 2004).

d) Short term interest rate.

High short-term interest rates to reduce inflationary pressures could be supported by fiscal policy or not, depending on the policy preferences, the views on the operation of the economy, and the allocation of tasks among policymakers. Modelling monetary policy by interest rate may capture other elements such as the cost of government financing. Including short term interest rate among the determinants of budget deficit may be advisable in case of predominantly short-term financing or in case there is a strong link between short-term and long-term interest rates (Tujula and Wolswijk, 2004).

e) Asset prices.

Studies regarding a few Nordic countries in the early nineties demonstrated that equity and house prices may significantly affect the government budgets. According to Tujula and Wolswijk (2004), the asset price effects on the general government budget may occur via the following channels:

- Directly via budgetary items (eg: capital gains taxes and wealth-induced changes in consumption tax revenues)
- Indirectly, via second-round effects of asset prices on the economy, for instance lower consumer tax revenues due to lower consumer confidence and private consumption when asset prices decline.
- Via the fiscal costs of a budgetary bailout of financial institutions in trouble.

f) Welfare level.

To measure the welfare level, it is usually used the real GDP per capita (Agnello and Sousa, 2009). Usually, countries with a low level of welfare confront high budget deficits due to the increase of public investment expenditures (Woo, 2003).

g) Openness.

This variable is defined as the ratio of national trade to GDP, and it has a negative impact on budget deficit, due to the fact that countries with a higher degree of openness are expected to be more exposed to external shocks (Agnello and Sousa, 2009).

3. Political and institutional variables

Many studies proved that some political features could have a major impact on the fiscal policy changes of one state and on the budget deficit respectively. Among the main political variables that could affect the dynamics of budget deficit we can name the political instability factors (eg: election frequency) and the ones from the political orientation topic (left or right political government) (Tujula and Wolswijk, 2004).

a) Electoral cycles.

It is well-known that in the electoral years the politicians spend more public money and tax less, and this goes to raising the budget deficits. This behaviour of politicians is sustained by the need to be re-elected. Tujula and Wolswijk (2004) proved that in the OECD countries, in the electoral years from the analysed period (1970-2002), the budget deficits increased in average with 0.3% of GDP.

b) Government structure.

Referring to **the political orientation**, Kontopoulos and Perotti (1999) concluded that periods governed by left-wing political parties are marked by higher public expenditures and higher budget deficits than those governed by right-wing parties. Carlsen (1997) added on that left-wing political governments sustain the implementation of the anti-cyclical programmes in the recession periods and the economic consolidation in the boom periods. Agnello and Sousa (2009) suggest using an indicator that encloses government changes. On the other hand, if we refer to the **number of political parties** (Woo, 2003), a higher number of parties means a bigger probability to create a governmental coalition, thus rising the probability to confront higher budget deficit.

c) Type of government.

It is considered that single-party governments have a bigger decisional power than coalition governments, and they can apply less popular fiscal measures in order to reduce budget deficit. Agnello and Sousa (2009) suggest using the democracy versus totalitarianism index, which is the same index used by Roubini and Sachs (1989).

d) Government crisis.

Countries with frequent government changes usually face higher budget deficits. Allesina and Tabellini (1990), Agnello and Sousa (2009), Roubini (1991) analyzed a sample of developing countries and proved that political instability measured by the number of government changes goes to rising budget deficits.

e) Fiscal governance.

This variable measures the way in which the budgetary power is distributed: either to the Public Finance Ministry, or the Public Finance Ministry has just the role to approve the budgets of the other different Ministries, or the budgetary decisions are taken more or less independently by the others Ministries (Halleberg, 2004).

f) Overall political constraint index.

According to Henisz (2002) this index measures the quality of political institutions in a country, and the higher the quality, the lower are the expected deficits.

g) Social polarization degree.

Woo (2003) considers this indicator of special importance as it measures the differences between the budgetary incomes of the different countries that were analysed. The socio-political effects on budget deficit tend to be more reduced in countries with a developed institutional infrastructure, than in the countries with a weak institutional structure, where the social polarization has a deep impact on the budget deficit. Special attention is paid to the procedures that need to be implemented within the budgetary process; these procedures are linked to the quality of the institutional system. Institutions with a high quality level could make the difference in the public finances. Thus, an efficient tax-collecting system and a better payments monitoring system might strengthen the fiscal position of a country. The negative effects of the political instability or the social polarization on the budget deficit could be diminished by the existence of powerful public institutions that are governed by strict budgetary rules.

h) Income inequity.

This variable is considered to be a source of social conflicts, leading to populist fiscal policies and weak macroeconomic performances. The income inequity indicator is quantified with the help of Gini coefficients (Woo, 2003). The higher social polarization degree, the higher the budget deficit is.

i) Over 65 years old population.

This variable has a direct impact on budget deficit, as a rising share of over 65 population means increased social expenditures, affecting negatively the budget deficit.

j) Other political variables: the major constitutional changes, the number of political assassinations, revolutions and a composite index of the most relevant political variables (calculated using the main components analysis). All of these negatively impact the budget deficit. Woo (2003) computes a composite index of political variables which proved to be statistically significant, and with the expected sign (a one percent rise goes to a 1.02 percent of GDP rise of budget deficit).

4. Demographic variables, such as the number of inhabitants. This variable is used to express the country size effect on budget deficit. (Agnello and Sousa, 2009).

5. Dummy variables.

These variables are used to capture the impact of different events (political, economic or social) that could have a significant impact on the budget deficit. There could be used country specific dummies (e.g. Germany unification) or year-dummies to take into consideration certain macroeconomic shocks which can not be reflected using quantitative variables (e.g. joining international organizations, war periods, natural calamities, etc).

Agnello and Sousa (2009) consider relevant to use a regional dummy to highlight the potential differences between the volatilities of budget deficits from different regions (eg. dummy takes value 1a for EU15 countries and value 0 for the rest of the countries). In order to catch the influence of the political regime on budget deficit, Woo (2003) used a dummy variable that take value 1 for a presidential political regime and value 0 for a parliamentary regime.

3. The empirical analysis of the determinants of budget deficit in Romania

3.1. Data

The empirical study of the determinants of budget deficit in Romania supposes deciding on the following issues:

- **Econometric method.** For the purpose of this analysis we are going to use the Ordinary Least Squares Regressions (OLS).
- **Time horizon.** We will use annual data for Romania for the period 1995 to 2011. The unavailability of statistical data represents one of the shortcomings of the econometric model and this might have negative effects on regression relevance. Thus, the time series have just 17 observations, and the results need to be cautionary interpreted, taking into consideration the shortcomings.
- **Dependent variable.** Trying to identify the appropriate indicator to quantify Romania's budget deficit we decided to use **the general government deficit as share of GDP** (the conventional budget balance). The main arguments are the availability of data, as well as the fact that general government deficit is the most monitored and targeted variable by Romanian Government. This variable is used in national and international reporting as well as in the context of financial agreements signed with the international organizations.
- **Independent variables.** According to the existing studies on this topic, we decided to analyze the impact of the following independent variables:

1. Macroeconomic variables:

- Economic growth
- Inflation rate
- Unemployment rate
- GDP per capita as a proxy for social welfare
- Interest rate
- Lagged budget deficit

2. Political variables: dummy variable measuring the impact of the electoral years on the evolution of budget deficit.

3. Dummy variables to capture different shocks. For example a dummy to capture the inflation shock from year 1997 when inflation reached 154,8% and it was the year of the last liberalization stage (no more restrictions for food prices, quitting the under-evaluating policies for electricity, heating and natural gas, liberalization of foreign exchange market – march 1997).

The data series used to analyse the determinants of Romania's budget deficit for the period 1995-2011 are described in Table 1, as follows:

Table 1: Data description

Crt.	Variable	Description	Note
1.	Budget deficit	General government budget = conventional budget deficit, computed respecting ESA 95	conv_def_esa
2.	Lagged budget deficit	General government budget = conventional budget deficit, computed respecting ESA 95, one year lagged	conv_def_esa (-1)
3.	Economic growth	Annual real GDP growth	realgdp
4.	Inflation rate	Consumer price index	inflation
5.	Unemployment Rate	Ratio between the registered unemployed people and the active population	unemployment
6.	GDP per capita	Log of real GDP per capita	ln_percapita_gdp
7.	Nominal interest rate	Romanian interbank offered rate (12 months) = ROBOR 12 M	ir
8.	Real interest rate	Romanian interbank offered rate (12 months) = ROBOR 12M, adjusted with inflation*	real_ir
9.	Electoral years dummy	Dummy takes value 1 for the electoral years (1996, 2000, 2004, 2009) and 0 otherwise	dummy_elections
10.	Dummy for 1997 inflation	Dummy takes value 1 for year 1997, when an outlier was observed and 0 otherwise.	dummy1997

Source: National Bank of Romania, National Institute of Statistics, Ameco Data Base, Eurostat, International Monetary Fund, WEO Database – October 2010.

Note: * The real interest rate was computed using the Fisher relation : $(1 + \text{nominal interest rate}) = (1 + \text{real interest rate}) \times (1 + \text{inflation rate})$.

3.2. Testing time series stationary

The results of unit root tests for the variables intended to be used in the empirical analysis are summarised in Table 2. When performing the ADF test the trend component is included if the series has a clear ascending or descending trend; this is the case the variable is trend stationary. Similarly, the constant is included if we can easily observe that the mean of variable is close to zero.

Table 2: Unit root tests

Variable	ADF statistics	Notes
conv_def_esa	-3.472075**	Constant
realgdp	-2.330438**	Neither constant or trend
inflation	-23.18385***	Neither constant or trend
unemployment	-0.645455	Neither constant or trend

ln percapita_gdp	-2.526146	Constant and trend
ir	-2.679043**	Neither constant or trend
real_ir	-5.436752***	Neither constant or trend

Note: *, **, *** denote the significance level of 1%, 5%, respectively 10% (MacKinnon (1996) critical values for a 17 observations sample: 1% significance level: -4.05 (constant), -4.80 (constant and trend), -2.7 (none); 5% significance level: -3.11 (constant), -3.79 (constant and trend), -1.96 (none); 10% significance level: -2.7 (constant), -3.34 (constant and trend), -1.6 (none).)

The null hypothesis of unit root is rejected for the following variables: conventional deficit, real GDP growth and nominal interest rate at 5% significance level and inflation and real interest rate at 1% significance level. The null hypothesis of unit root could not be rejected for the series of unemployment and GDP per capita, concluding that these series are not stationary and we should remove them from the explicative variables and move on with the analysis of the stationary series.

3.3. OLS estimates

We used the general model of multiple regression in order to analyse the determinants of Romania's budget deficit for the period 1995-2011:

$$Y = \alpha + \beta * X + \varepsilon \quad (1)$$

where:

- Y is a T -dimensional vector containing the observations on the dependent variable, represented by the general government budget deficit (%GDP)
- X is a $T \times k$ matrix of the independent variables (the exogenous variables) represented by the real GDP growth, the inflation rate, the nominal and real interest rate, the lagged variables and the dummy variables
- a, b are the k -vectors of the coefficients
- ε is a T -vector that represents the residuals that have to follow a normal distribution
- T is the number of observations (17 observations for the analysed period) and k is the number of the independent variables (the right-hand side regressors).

We will perform our analysis by estimating not just one, but more regression models, starting with few-variables-regressions and gradually introducing the others, reaching the all-variables-included regression model, according to the significance of the regression variables coefficients.

The OLS results for the different regression models studied are presented in the Table no. 3 below:

Table 3: The determinants budget deficit in Romania in period 1995-2011 (annual data frequency)

The dependent variable: General government budget deficit (conv_def_esa)							
Explicative variables	Model I	Model II	Model III	Model IV	Model V	Model VI	Model VII
Constant	4.64*** (10.29)	5.52*** (9.02)	2.41** (2.45)	5.51*** (7.47)	4.56*** (9.25)	4.47*** (8.54)	5.72*** (7.96)
realgdp	-0.318*** (-3.74)	-0.39 *** (-4.52)	-0.17* (-1.81)	-0.36*** (-4.12)	-0.32*** (-3.48)	- 0.31*** (-3.54)	-0.39***
inflation		-0.02* (-1.95)					-0.03 (-1.48)
conv_def_esa(-1)			0.51** (2.48)				
ir				- 0.02 (-1.60)			
real_ir					0.01 (0.39)		
dummy_elections						0.61 (0.66)	
dummy1997							1.84 (0.57)
R ² :	0.48	0.59	0.63	0.56	0.48	.49	0.60
Adjusted R ² :	0.44	0.530	0.58	0.50	0.40	0.42	0.51

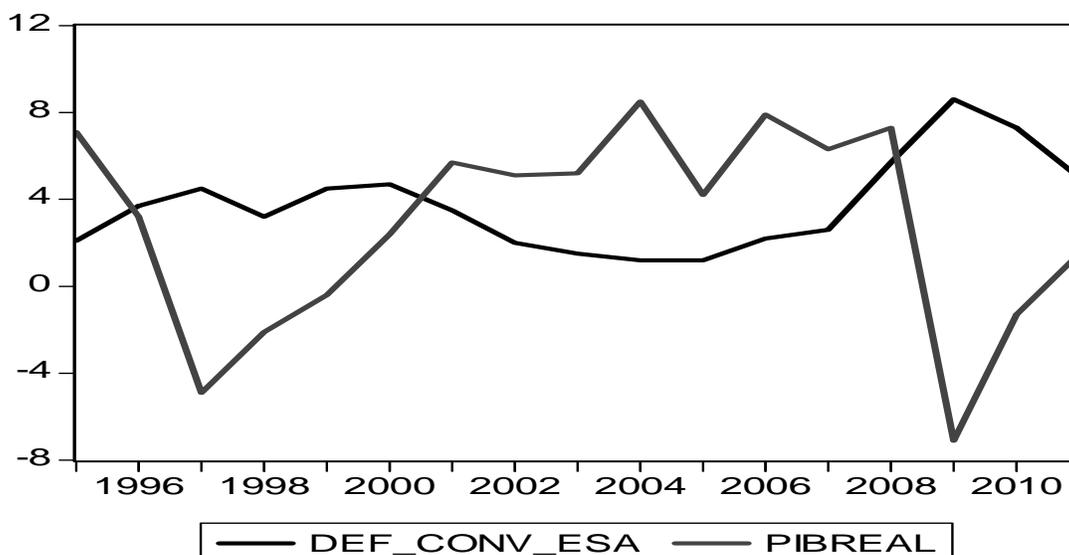
Note: (): t-statistic; *, **, *** denote the significance level of 1%, 5%, respectively 10%.

3.4. Empirical results

The OLS results emphasized that only *theeconomic growth, theinflation and thelagged budget deficit* had a significant influence on Romania's budget deficit of the last 17 years.

According to *Model I*, the estimated coefficient of economic growth (real GDP growth) is significantly different from zero with a 99% probability (significance level of 1%) and has the expected sign (-). Regarding the analysed period, the real GDP growth had a positive impact on the budget deficit: an increase of one percent on the real GDP growth is a fall of 0.3 percent on budget deficit (%GDP). The economic growth can explain 48% of the endogenous variable. The period between year 2000 and the start of the global financial crisis (the end of year 2008) was characterised by high economic growth, higher budgetary incomes and low budget deficits. (GDP ↑ - INCOME ↑ - BD ↓).

Figure 1: General government deficit and real GDP growth in Romania in period 1995-2011.



Source: processed by the author using data described on Table 1

Moving on with the regression model, we introduced the inflation rate (*Model II*). Statistically speaking we can see an improvement of the regression (higher R^2). Thus, both real GDP growth and inflation have a higher explanatory power, explaining 59% of the budget deficit. The inflation rate coefficient is statistically significant at 10 % level, having a negative sign (-0.02), meaning that an increase of one percent on inflation is a fall of 0.02 percents on budget deficit. The expectations regarding the coefficient of inflation are not consistent with the economic theory, as it states that higher inflation leads to higher interest rates, and that means higher interest expenditures on public debt, which deepens the budget deficit. (Inflation ↑ - Interest ↑ - BD ↑). The estimated coefficient of inflation has a reduced impact on budget deficit (-0.02) even if statistically speaking it is significantly different from zero.

In order to test the potential influence of one year lagged budget deficit (conv_def_esa (-1)) we introduced this variable beyond the economic growth (*Model III*). The resulting model proves to be statistically the most relevant, with the higher $R^2 = 0.63$. The coefficient of one year lagged budget deficit (0.51) is statistically significantly different from zero at 5% confidence level. This means that lagged budget deficit from previous year has a direct influence on the present budget deficit, highlighting that past fiscal and budgetary decisions show their effects after a lagged period (one year period in our case). Introducing this variable has the role to correct the budgetary disequilibrium from the past.

Regarding the coefficients of the others variables used, these proved to not to be statistically significantly different from zero. Neither the nominal interest rate (*Model IV*), nor the real interest rate (*Model V*) has a significant effect on budget deficit. The interest rate influences the budget deficit through public debt interest expenditures channel. The public debt of Romania (share of GDP) registered quite low levels in the analysed period, rising from the average level of 20% of GDP in the 2000's to 36% of GDP as of April 2011, this could be one of the reasons that interest rate is not one of the determinants of the budget deficit of Romania.

The political variable, dummy elections, was intended to be used to capture the electoral cycles, but for the case of Romania, this variable can not be considered a budget deficit determinant (*Model VI*). As the coefficient is not statistically significant we proceeded at the elimination of this variable from the regression model. In Romania we still can not speak about the influence of the electoral cycles on the budget deficit, this situation being justified by the reduced size of the time series and by the absence of electoral experience of our country.

The variable dummy1997 was used to capture the inflation shock form 1997, but introducing this dummy proved to be irrelevant, thus we eliminated it from the regression (*Model VII*).

4. Conclusions

Using yearly time series for the period 1995-2011 and applying the OLS regression technique we proceeded to analyse the determinant factors of the general government budget of Romania. Though, the empirical findings underlined that there are some negative influences of real GDP growth and inflation rate on budget deficit. Also, among these two determinants the one period lagged budget deficit has a direct influence on budget deficit.

Analysing the determinant factors of Romania's budget deficit represent a real challenge, as the national literature presents a limited number of studies on this topic due to the unavailability of statistical data needed to perform the econometric investigation. In order to benefit by bigger size time series we should extend the analysis on quarterly or monthly series, but we have to do this with prudence as we will have to use proxies for some variables or to interpolate them. We also have to take into consideration, especially for the Romanian case, that the statistic data are not fully adequate for economic estimations as they refer to the transition period and that there are missing data for some important variables.

In conclusion, the results of the present analysis should be cautiously interpreted taking into consideration the reduced size of the used time series.

For further research we intend to analyse the determinants of budget deficit of Romania using quarterly series and applying both the OLS and the Vector Autoregressive (VAR) and Error Correction Mechanism (ECM) Techniques.

5. Acknowledgements

This research paper was done within POSDRU/6/1.5/S/26 Programme co-financed by The European Social Fund through the Sectorial Operational Programme Human Resources Development 2007-2013.

6. References

- Agnello, L., and R. M. Sousa (2009), The determinants of public deficit volatility , *ECB Working Paper*, No. 1042
- Alesina, A., and R. Perotti (1999), Budget Deficits and Budget Institutions in J. Poterba and J.von Hagen (eds.), *Fiscal Institutions and Fiscal Performance*, University of Chicago Press, Chicago IL, and NBER, 1999, pp. 13-36.
- Barro, R (1979), On the Determination of Public Debt, *Journal of Political Economy*, 87, October, pp. 940-971.
- Buti, M., and P. van den Noord (2003), Discretionary Fiscal Policy and Elections: the Experience of the Early Years of EMU, *OECD Economics Department Working Paper*, nr 351.
- Budina, N. and S. Van Wijnbergen (2000), Fiscal deficits, monetary reform and inflation stabilization in Romania , *World Bank Working Paper Series*
- Carlsen, F. (1997), Counterfiscal Policies and Partisan Politics: Evidence from Industrialised Countries, *Applied Economics*, 29, pp. 145-151.
- Comaniciu, Carmen (2006), Considerations regarding the Romanian fiscal and budgetary reform in accordance with the E.U. requirements, *MPRA Paper 3430, University Library of Munich, Germany*
- De Haan, J., and E. Sturm (1997), Political and Economic Determinants of OECD Budget Deficits and Government Expenditures: A Reinvestigation , *European Journal of Political Economy*, 13, pp. 739-750.
- Dickey, D. A. and, W. A Fuller (1981), Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root, *Econometrica, Econometric Society*, vol. 49(4), pages 1057-72, June.

- Eschenbach, F., and L. Schuknecht (2002), The Fiscal Costs of Financial Instability Revisited, *ECB Working Paper*, No. 191.
- Galli, M. and F. Padovano (2002), A comparative test of alternative theories of the determinants of Italian public deficits (1950-1998) , *Public Choice*, 113: 37-58.
- Hallerberg, M. (2004), Domestic Budgets in a United Europe: Fiscal Governance from the End of Bretton Woods to EMU, *Cornell University Press*.
- Henisz (2002), The Institutional Environment for Economic Growth , *Economics and Politics*, Vol. 12, pp. 1-31.
- Melitz, J. (2000), Some Cross-Country Evidence about Fiscal Policy Behaviour and Consequences for EMU, *European Economy*, 2, pp. 3-21.
- Noord, P. van den (2000), The Size and Role of Automatic Fiscal Stabilisers in the 1990s and Beyond , *OECD Economics Department Working Papers*, No.230.
- Perotti, R., and Y. Kontopoulos (2002), Fragmented Fiscal Policy , *Journal of Public Economics*, 86, pp. 91-222.
- Roubini, N. (1991), Economic and political determinants of budget deficit in developing countries , *Journal of International Money and Finance*, 10, S49-S72
- Roubini, N., and J. Sachs (1989), Political and Economic Determinants of Budget Deficits in the Industrial Democracies , *European Economic Review*, 33, pp. 903-938.
- Schuknecht, L., and F. Eschenbach (2002), Asset Prices and Fiscal Balances , *ECB Working Paper*, No. 141.
- Tujula, M and G Wolswijk (2004), What determines fiscal balances? An empirical investigation in determinants of changes in OECD budget balances , *ECB Working Paper*, No. 422, December 2004
- Ungureanu, A.M. (2007), Finanțe publice-sinteze și aplicații , ediția a 2-a, *Editura Conphys*
- Văcărel Iulian (2007), Finanțe publice , ediția a VI-a, *Ed. Didactică și Pedagogică, București*
- Viren, M. (2000), How Sensitive is the Public Budget Balance to Cyclical Fluctuations in the EU , *Government Institute for Economic Research Discussion Paper*, No. 230.
- Woo, J. (2003), Economic, Political and Institutional Determinants of Public Deficits , *Journal of Public Economics*, 87, pp. 387-426.
- Government of Romania (2010), Convergence Program 2009-2012, February 2010.
- Government of Romania (2011), Convergence Program 2011-2014, April 2011.
- NBR (2009), Financial Stability Report.
- NBR (2010), Financial Stability Report.
- IMF (2001-2010), Country Reports.

APPROACH THROUGH PRACTICAL RESEARCH OF INTELLECTUAL CAPITAL**MIHAI Irina**

Ph. D. Student/Teaching assistant, Faculty of Economics and Public Administration /Department Accounting, Finance and Economic Informatics, Ștefan cel Mare University, Suceava, Romania, irinam@seap.usv.ro

CIOBAN Alexandra Narcisa

Ph. D. Student/Teaching assistant, Faculty of Economics and Public Administration /Department Accounting, Finance and Economic Informatics, Ștefan cel Mare University, Suceava, Romania, alexandrac@seap.usv.ro

BALAN Ioana

Ph. D. Student, Faculty of Economics and Business Administration, Alexandru Ioan Cuza University, Iași, Romania, ioana_balan85@yahoo.com

Abstract: *The literature is referring increasingly to the new era of knowledge, which is based on new techniques and concepts including intellectual capital. So far we have provided information on the study of the wide range of sources at which we had access. Will be hard to select who will be the most representative sources, but not impossible because we know that the results should straighten their attention to intellectual capital accounting. Throughout the article are discussed national and international techniques in order to observe whether or not there are different ways of reporting concept.*

Key words: intellectual capital accounting, knowledge, accounting information, reporting practices

JEL classification: M 40, M 41, M 49, O 11, O 34

1. Introduction

Research of the concept of intellectual capital is part of the new horizons approach of the new economy, the knowledge-based economy. Actuality-novelty of the present research is the concept itself of intellectual capital as part of the new economy based on knowledge, in which the value of the entity is given by the knowledge, capabilities, skills of intellectual capital. Currently, any economic activity is based on physical capital, structural and relational, as component elements of intellectual capital.

Research theme entitled " Approach through practical research of intellectual capital" begins with setting methods that we use in the analysis of the concept of intellectual capital in national and international practice, on level studies, articles and books on the subject.

Research methods are numerous and are classified under different criteria, but the most important criterion is the difference between the methods of qualitative research and quantitative research. Quantitative research methods were able to develop with the help of specific studies of natural sciences (Andone, Georgescu, Toma, 2010). As regards qualitative research methods, they have been developed in economics, but also in the social sciences in order to facilitate the investigation of the phenomena of social, cultural and economic queries by researchers. The best examples of qualitative research, refer to the following methods (Andone, Georgescu, Toma, 2010, p. 244): 1. Research on the practice field (action research); 2. Investigation of the case studies (case study research); 3. Ethnographic research (ethnography study research); 4. Explorative research (grounded theory).

Considering that of those studied by us, a research method is actually an investigation, we want through this approach to investigate the current state of knowledge of the practice of intellectual capital, from the point of view of the studies carried out, the articles published and also of the printed books at national and international levels. We proposed to study through a research-based online international databases, to do a distribution on the component of intellectual capital, as they were examined, and to identify which components of intellectual capital are recognized by the literature.

We start this research from investigation of the current status of intellectual capital of the field of intellectual capital analysis, we identify relevant books in the field as in final, the synthesis of the research can get the emphasize strengths and weaknesses of the recognition of intellectual capital in literature.

Thinking this way this research, maybe we will be asked why we structured this way the research, and arguments would be the following: -the field analysis is relatively new and topical; -are not known all sources of information in terms of intellectual capital; - emphasising some questions such as:

what are the components of intellectual capital?; Which components of intellectual capital are recognised by accounting?; at national level, the concept of intellectual capital is recognized?.

Browsing through this research we want to identify and fix working assumptions, we clear up questions and in the end we can sustain a future research which aims at recognition in accounting but also the valuation of intellectual capital.

In order to respond to the challenges, we will try to delimit the concept of intellectual capital, namely:

- „intellectual capital is the sum of everything that people from an organisation know, giving it its competitive advantages on the market;
- intellectual capital is recognized as a value in most enterprises, but it is not measured and rated in any other organization's financial statement, except for market value achieved on the stock exchange;
- intellectual capital is the intellectual material which has been formalized, captured and put in value to produce assets more valuable. He is given by the knowledge that can be converted into values ".

According to accounting approach the concept of intellectual capital is recognized in the balance sheet as an asset identified as an intangible asset. By international standards, namely the IAS 38 an asset is a resource: -controlled by the company, as a result of past events and who is expected to generate future economic benefits to the entity.

An **intangible asset** is an identifiable asset, unmonetary, without physical substance and held for the purpose of the production process or supply of goods or services, for rental to third parties or for administrative purposes. They can be recognised in the balance sheet if it is estimated that will generate economic benefits for the country and the cost of the asset can be reliably assessed in.

2. Practical national research

Practical national research is structured on representative analysis articles, extracted from the literature in the past three years and published in major journals in the field of analysis. Articles will be ranked on the fields and structured in the form of tables.

Table 1: Information representative of research at national level in 2010-2012

Articles/ Studies	Year of publication/Source	Summary
	2012 Bridging intellectual capital and the competitiveness of nations	The article has tried to answer the question-intellectual capital affect in one sense or another the competitiveness of a country taking into account the components such as: <u>human capital</u> , <u>market capital</u> , <u>the capital process</u> , <u>capital renewal</u> . Concluding, the developed countries take into account the components set to <u>highlight their competitive nature</u> .
	2011 Empirical study on the regulation of intangible assets internationally and correlation with the degree of development of intellectual capital perspective	The empirical study that refers to <u>reporting intellectual capital</u> in the AFS doesn't recognize the elements of intellectual capital, don't report them neither on macroeconomic level neither on entity level. Non-recognition of assets created in the processes of research and development. <u>Implementation of IFRS referential</u> is optional and not permitted for unlisted companies on the stock exchange or unconsolidated financial statements.
	Empirical study on financial reporting of intangible assets by Romanian companies	The empirical study that refers to <u>Romanian companies listed on BVB that report intangible assets</u> , identifying the fact that Romanian firms offer a low degree information regard to intangible assets.
	The effect of commitment and motivation on human talent and its contribution to organizational performance	The article emphasizes <u>human resource motivation from the organization</u> . Also shows the importance of the human resource in the Organization and what contribution can have its talent and performance for the company.
	2010 The role of intangible assets in the process of value creation and models for measurement.	Article is studying the Romanian companies listed on the stock exchange and the manner in which these companies <u>recognize and report intellectual capital</u> , reaching the conclusion that there are very many items of <u>intangible assets</u> that are not recognized and reported by these companies.

Books	2011 Financial accounting	<u>Intangible assets accounting</u> : treatment of the various elements of intangible assets from the accounting point of view: formation expenses, the costs of development, concessions, patents, licences, trade marks and similar rights and assets, except those created internally by the entity, goodwill, other intangible assets.
	Evaluation of enterprise	<u>Evaluation of different elements of intangible assets</u>
	2010 Evaluation of enterprise	Evaluation of intangible assets - <u>intellectual capital</u> . The source value of intangible assets of companies.
Legislation	2010 Intellectual property law	Demonstrates that the patent, industrial design, trademark, copyright, are protected by intellectual property law.

Synthesizing it can be seen that during the analysis period 2010-2012 the studies have moved to the intellectual capital research as a whole and not in parts, noticing thus that the level of 2011 the concern was more evident in terms of articles made, studies and books that appeared regarding intellectual capital. As from the accounting point of view the intellectual capital enter the category of intangible assets, can be seen the study and dissemination of information through studies, articles and books.

It can be noticed that the Romanian companies do not report intellectual capital, doesn't recognize it in the AFS, which we believe is due, first and foremost the national law, then the standards that must be complied with and the lack of information on the recovery and identification of intellectual capital.

The literature, as you can see, offers us informations regarding the evaluation of the various elements of intellectual capital-in other words the notional assessment exists, remains that what is found in practice to be recognized.

Through this analysis we are only interested in the number of studies or articles produced, or books, but that is their view on the recognition of intellectual capital. We can conclude that in Romania intellectual capital is recognized only through the few items of intangible asset, assets which they relate and are recognized in the annual accounts of companies primarily listed, the remaining doesn't have material support so it can be recognized .

Table 2: Synthesis of the nationwide research during 2010 - 2012

Elements of intellectual capital	Studies	Articles	Books	Legislation
Human capital	1	-	-	-
Intellectual capital	1	1	-	-
Intangible assets	1		3	
Human resource		1		
Intellectual property				1

3. International practice research

Expand our research at international level, where we can notice that the research on intellectual capital is much greater. Of those investigated by us so far there are specialized organizations who are dealing in special of recognition, measurement and reporting of intellectual capital.

International development studies on intellectual capital followed a *tricentric* scientific "movement" around **Japan, the United States and Europe**. The first work that refers to the concept studied by us was around 1980, which attests to the importance of the concept internationally.

2010-2012 years proposed by us for this study have marked the accountant research of the concept of intellectual capital, so it was very difficult as in numerous articles that we have encountered in the literature to select the most representative. So, we selected only those relating to accounting research, specifically reporting intellectual capital or its elements.

Table 3: Representative Information for research at international level years 2010-2012

Articles/ Studies	Year of publication The Name	Summary
	2012 Disclosure and reporting of intellectual capital in	Researchers who have interpreted their research "Disclosure and reporting of intellectual capital in iranian corporation" refers to the fact that the corporate sector of Iran seeks to turn its attention to the intellectual capital, because they are observed that not the land or equipment can bring value. Thus they seek new ways of registration in accounting the intellectual capital.
	2011 Construction and Valuation of intellectual capital : a case study	The Research defines the component elements of intellectual capital but also the value created by each element for a company in Italy. The researchers concluded that: intellectual capital has an influence in obtaining financial performance.
	Using two new models for measuring the Intellectual Capital	Research carried out by the authors turning their attention to two models of measurement of intellectual capital namely Skandia and Monetary model of Tobin's Q . First defines the market value of the firm. Researchers have described the two models and have proposed a new model that uses the accounting informations which, they claim advantages but also disadvantages.
	Effect of recognition of Intellectual Capital on relevance of Accounting Information	This research was carried out by researchers from the University of Malaysia inform us that the recognition of intellectual capital has a major impact on the provision of financial information for the accounts. It is also submitted that accounting standards and accounting practice, should be adapted according to the requirements of the new economy, the knowledge-based economy and to help build the road to recognition of intellectual capital as an asset for the company.
	2010 Measuring Intellectual Capital in Corporations	Researchers of this article have surprised the fact that among components in intellectual capital , in companies can be found physical capital, human capital, social capital, structural capital. To measure these components as described above, researchers have tried to use the model proposed by Edvinson and Malone. Concluding, the emphasis is on knowledge, companies and shareholders disclaim all components of intellectual capital that could give the market value of the company.
Books	2011 International Financial Reporting- a practical guide	This book identifies each element of asset, of incorporeal assets but also intangible assets examples that can be found in practice, their method of recognition and recovery.
Specialized international organizations	Intellectual capital Sweden Site: http://www.intellectualcapital.se/Default.aspx?page=17	Intellectual Capital Sweden AB help companies to analyze and develop their hidden assets, particularly focusing on people, processes, and relations. Since Intellectual Capital Sweden AB inception in 1997, they had conducted more than 400 projects for companies all over the world, and we have licensed our tools to partners in some 30 countries.

Table 4: Synthesis of research at the international level in the period 2010-2012

Reference elements	Articles/ Studies	Books	International organizations
Recognition and reporting of intellectual capital-realized	1	1	1
Recognition and reporting of Intellectual capital - unrealized	1	-	-
Intellectual capital and financial performance	1	-	-
Intellectual capital and information provided by the accounting	2	-	-
Total	5	1	1

Synthesizing internationally can be seen a major interest for the recognition and reporting of intellectual capital. What we wanted to reveal through this is that human resource is harnessed at international level. The emphasis is on human resource performance, its knowledge, on the application of various models of evaluation of intellectual capital for his recognition in the accounting. Reference indicators at the international level have been achieving or not reporting intellectual capital, and here we can see that some countries recognize and report their concept. In this sense there are specialist organisations that help companies to recognize the intangible. An indicator that we watched was the financial performance when we acknowledge the intellectual capital but also the informations that the accounting provides us and helps us in the reporting period. In conclusion the inatangible part of incorporeal assets is internationally recognized and reported.

4. Conclusions

The most important factor of production is small, grey and weighs on average 1.3 kg. It is the human brain "(Nordström & Ridderstråle, 2000), is the phrase that urged us to study this factor of production named in the literature: the intellectual capital. Our society is changing on several levels with an ascending speed .

Talking about the Knowledge Economy or The New Economy, which is characterized by several factors, which are not similar to those that characterize the traditional economy. Examples of such features are: increased digitization, globalization, technological changes and the application of knowledge.

Our contribution consisted in the fact that we have collected information from national and international level, we centralized, we have systematically detailed to be easy, understandable and subsequently used.

As a result of research we found that the reference period chosen was too short, the sample was not so representative to remove the highlighting how the concept of intellectual capital is underlined in accounting. Through this research we pursued the account part approached in examined papers and we dealt we found that very few elements of intellectual capital accounting are recognised by science. Also was easy for us to understand that intellectual capital is not yet very well explored, particularly at the national level, so that was pretty hard to find in the literature depth studies on the topic.

Addressing the accounting side of intellectual capital, through literature can be seen from the following study reveals that, while there are elements without the company would not exist, it isn't recognized the fact that they should be reported.

This research did than to surprise in a minor extent the practical business approach of intellectual capital, and has found that countries such as Sweden, Italy are heading their attention to this matter and also companies listed on the stock exchange are interested in reporting concept.

Analyzing the research we conclude by mentioning that the authors wished only to surprise on the basis of literature the manner and approach of intellectual capital at national and international level, because the foundation of a future accounting research must be very well planned. Large landmarks have been established so that in the future the research will expand by what the authors present in the practice of intellectual capital accounting.

5. References

- Andone, I, Georgescu, I., Toma, C (2010) *Cercetare avansată în contabilitate*, Ed. Wolters Kluwer România, București, pp 242-244, ISBN606820118-X
- Anghel I.,Negrescu, M., Popa, Anica, A., Popescu, A.(2010) *Evaluarea întreprinderii*, Ed. Economică, ISBN 978-973-709-524-4, București
- Bucătaru, D (2011).*Evaluarea întreprinderii* , Ed.Tipo Moldova, ISBN978-973-168-463-5, Iași
- Damirchi, Q. V., Amiri, F, Rezvani A H *Disclosure and reporting of intellectual capital in iranian corporation* (2012) Interdisciplinary Journal Of Contemporary research in Business, January, 2012, Vol. 3, NO. 9, pp.155-167, Available at <http://www.journal-archives14.webs.com/155-167.pdf>, accessedonthe 20.04.2012
- Fădur, C.I, Ciotină, D., Mironiuc,(2011), *Studiu empiric privind raportarea financiară a activelor necorporale de către firmele românești* Economie teoretică și aplicată Volumul XVIII (2011), No. 8(561), pp. 3-14, Available athttp://store.ectap.ro/articole/621_ro.pdf, accessedonthe 18.04.2012
- Ghintuială, A. (2010)*The role of intangible assets in the process of value creation and models for measurement* RevistaEuroEconomica, Vol 26, No 3 (2010), pp.60-70,available at<http://journals.univ-danubius.ro/index.php/euroeconomica/article/view/716/653>accessedonthe 18.04.2012
- Giuliani, M.,Marasca, S.(2011) *Construction and Valuation of intellectual capital : a case study* Journal of Intellectual Capital, Vol.12 No.3, 2011, pp 377-391, available at <http://emeraldinsight.com/journals.htm?issn=14691930&volume=12&issue=3&PHPSESSID=79p8r3nfpqc6gdjhf6o2j6kvi4> , accessedonthe 19.04.2012
- Jaradaat,D., Saleh D.,Al-,Asma R(2011).*Measuring Intellectual Capital in Corporations* Interdisciplinary Journal Of Contemporary research in Business, August 2011, Vol.2, No4, pp.42-52, available at <http://ijcrb.webs.com/archives.htm> , accessedonthe 19.04.2012
- Melville, A. (2011) *International Financial Reporting- a practical guide*,Prentice Hall, Financial Times
- Naslmosavi, S.H., Ghasemi, G., Mehri, M.(2011) *Using two new models for measuring the Intellectual Capital* Interdisciplinary Journal Of Contemporary research in Business, June 2011, Vol 3, No2, pp. 358-365, available <http://journal-archives8.webs.com/jun11.pdf> ,accessedonthe 19.04.2012
- Neșțian, A (2006)- *Concepte și modele de managementul cunoștințelor aplicabile în dezvoltarea regională*, Revista Management & Marketing, Available at <http://www.managementmarketing.ro/>, accessedonthe 04.03.2012
- Oprescu, R,(2012) *Bridging intellectual capital and the competitiveness of nations* Management & Marketing Challenges for the Knowledge Society, Vol. 7, No. 1, pp. 73-88, , Available at <http://www.managementmarketing.ro/pdf/articole/256.pdf>, accessedonthe 18.04.2012
- Petrică, S. (2011)*Studiu empiric privind reglementările relative la imobilizările necorporale pe pe plan internațional și corelația cu gradul de dezvoltare din perspectiva capitalului intelectual* Revista Corpului Experților contabili și contabililor autorizați din România- ”Contabilitatea expertiza și auditul afacerilor”, Nr.3 , Martie 2011,p. 13(partea I); Nr.4 , Aprilie 2011,p. 11(partea II);
- Sofian,S.,Rasid, S.Z., Mehri, M., Umar M.S (2011). *Effect of recognition of Intellectual Capital on relevance of Accounting Information* Interdisciplinary Journal Of Contemporary research in Business, June 2011, Vol 3, No2, pp. 1654-1664, available at <http://journal-archives8.webs.com/jun11.pdf> , accessedonthe 19.04.2012
- Toma, C (2011), *Contabilitate financiară* Ed. Tipo Moldova, ISBN 978-973-168-488-8, Iași
- Waheed A., Sidra, W, Zaheer, A (2011) *The effect of commitment and motivation on human talent and its contribution to organizational performance* , Revista Management&Marketing, Nr. 3, , pp.471-482, Available at<http://www.managementmarketing.ro/pdf/articole/237.pdf>accessedonthe 18.04.2012
- *** Legislația proprietății intelectuale (2010) Ed. C.H.Beck
- ***<http://www.intellectualcapital.se/Default.aspx?page=17>

FISCAL POLICY'S INFLUENCE ON ECONOMIC GROWTH IN THE EUROPEAN UNION

MIHAIU Diana Marieta

*Ph. D. Teaching assistant, Faculty of Economic Sciences, Lucian Blaga University of Sibiu,
Sibiu, Romania, cindea_diana@yahoo.com*

OPREANA Alin

*Teaching assistant/Ph. D. Student, Faculty of Economic Sciences, Lucian Blaga University of Sibiu,
Sibiu, Romania, aopreana@yahoo.com*

Abstract: *In this paper we study the impact of the fiscal policy on the economic growth for European Union, for the period 2000-2009. This subject represents a very debated problem in the economic literature. Our findings shows that, from the analysis of correlation between economic growth rate and total rate of taxation, there is generally an inverse relationship, meaning that an increase in the tax rate adversely affects economic growth. Continuing the analysis of the correlation between economic growth rate and total tax rate components it can be seen that there is an inverse relationship between labor taxation and capital taxation and economic growth in EU Member States. Both labour and capital taxes are part of direct taxes, so we conclude that a rise in direct taxes will cause a reduction in real GDP growth rate. In contrast, between taxes on consumption and real GDP growth rate there is no significant correlation.*

Key words: fiscal policy, economic growth, taxes on labour, taxes on capital, taxes on consumption.

JEL classification: E 62, H 20

1. Literature Review

The issue of a state fiscal policy, although widely recognized as being of major importance, still raises many questions such as: what kind of relationship exists between fiscal policy and economic growth? Increasing the total tax rate affects the real growth rate of GDP? How should act fiscal policy measures during the economic crisis: state must act pro-cyclical, neutral or countercyclical? How does total tax rate components act; does it matter the ratio's size, or its structure? These questions have tried to answer them for centuries, many researchers and specialists.

Afonso A. si Jalles J. T., based on a study of OECD countries related to "The Fiscal – Growth Nexus", concluded that "government revenue has a negative impact on growth. Taxes on income are usually detrimental to growth, as well as public wages, interest payments, subsidies and government consumption have a negative effect on growth (António Afonso & João Tovar Jalles, 2012, page 25)." The same authors, in a study published in February 2012 for the EU member states, have demonstrated that the fiscal rules set by the Stability and Growth Pact influence economic growth in the sense that restrictive tax provisions inhibit economic growth. (António Afonso & João Tovar Jalles, February 2012, page 5). The negative relationship between fiscal policy and equitable growth was also demonstrated by Hyun Park: "...when fiscal policy is endogenously chosen at a social optimum, the relation between the rate of growth and tax rates is always negative, and when fiscal policy is exogenous an inverse U-shaped relationship exists between tax rates and growth rates (Park H., 2010, page 122)."

The relationship between fiscal policy and economic growth was also studied by Martin Zagler and Georg Durnecker, and they concluded that "taxes on savings, R&D, profits, raw capital and labour, have a direct impact on the growth rate of the economy, while the total tax rate has an indirect effect on economic growth, as they may finance growth enhancing government expenditures (Zagler M., Durnecker G., 2003, page 409)."

R.H. Day and Yang Chengyu are reluctant to issue a rule related to relationship economic growth - tax rate, because in their view this depends on the time horizon and from a long-term perspective "the effects of an increase in public spending and a decrease in taxation on economic growth and government budget balance depend on the relative size of marginal propensity to consume and invest and **could be positive under certain conditions**; ... both positive and negative effects on growth and budget balance of the same fiscal policy are found in different time periods (R. H. Day, Yang C., 2011, page 218)."

Obreja L. Brasoveanu and Brasoveanu I, analysing the relationship between taxation – economic growth for the Romanian economy, "applying the regression technique for the period 1990-2007

concluded that in Romania the effects of the distortionary and nondistortionary taxes on economic growth are negative (Obreja Brasoveanu L., Brasoveanu I, page 25).”

Most of the studies demonstrate a negative relation between taxation and economic growth, or more accurately, no study shows that a high rate of taxation stimulates economic growth.

In the next section of this paper we test the correlation between fiscal policy and economic growth in European Union member states for the period 2000-2009.

2. Study Regarding The Relationship Between The Fiscal Policy And Economic Growth In The European Union

This study aims to objectively analyze the relationship between fiscal policy, expressed through taxation rate and economic growth rate in the EU, expressed in real GDP growth rate in the period 2000 to 2009. Following this analysis one can identify the operation mode of the fiscal policy on the economic cycle phases. Using statistical analysis software SPSS, there was made an analyses of the correlation that exists between the total rate of taxation and real GDP growth rate of each year, by Pearson correlation coefficient and the correlation between real GDP growth rate and total tax rate components: the average consumption tax, the average capital tax and the average labour tax. This type of segmentation was performed to capture the component of fiscal policy that most affects the economic growth, and in this way directions to follow will be drawn, in mater of the taxation in Romania in the period to come.

Table 1: Analysis of correlation between real GDP growth rate and total tax rate, the average consumption tax, the average capital tax and the average labour tax in the EU during 2000 - 2009

2000		total taxes rate (%GDP)	taxes on consumption (%GDP)	taxes on labour (% GDP)	taxes on capital (% GDP)
real GDP growth rate	Pearson Correlation	-.221	-.082	-.213	-.070
	Sig. (2-tailed)	.258	.677	.276	.723
	N	28	28	28	28
2001		total taxes rate	taxes on consumption	taxes on labour	taxes on capital
real GDP growth rate	Pearson Correlation	-.565**	-.214	-.357	-.511**
	Sig. (2-tailed)	.002	.274	.062	.005
	N	28	28	28	28
2002		total taxes rate	taxes on consumption	taxes on labour	taxes on capital
real GDP growth rate	Pearson Correlation	-.638**	-.055	-.455*	-.539**
	Sig. (2-tailed)	.000	.783	.015	.003
	N	28	28	28	28
2003		total taxes rate	taxes on consumption	taxes on labour	taxes on capital
real GDP growth rate	Pearson Correlation	-.628**	-.084	-.409*	-.580**
	Sig. (2-tailed)	.000	.669	.031	.001
	N	28	28	28	28
2004		total taxes rate	taxes on consumption	taxes on labour	taxes on capital
real GDP growth rate	Pearson Correlation	-.562**	.028	-.364	-.655**
	Sig. (2-tailed)	.002	.889	.057	.000
	N	28	28	28	28
2005		total taxes rate	taxes on consumption	taxes on labour	taxes on capital
real GDP growth rate	Pearson Correlation	-.573**	.106	-.413*	-.605**
	Sig. (2-tailed)	.001	.591	.029	.001

N		28	28	28	28
2006		total taxes rate	taxes on consumption	taxes on labour	taxes on capital
real GDP growth rate	Pearson Correlation	-.608**	.040	-.339	-.723**
	Sig. (2-tailed)	.001	.840	.078	.000
	N	28	28	28	28
2007		total taxes rate	taxes on consumption	taxes on labour	taxes on capital
real GDP growth rate	Pearson Correlation	-.667**	-.051	-.484**	-.446*
	Sig. (2-tailed)	.000	.797	.009	.017
	N	28	28	28	28
2008		total taxes rate	taxes on consumption	taxes on labour	taxes on capital
real GDP growth rate	Pearson Correlation	-.251	.320	-.382*	-.024
	Sig. (2-tailed)	.198	.097	.045	.905
	N	28	28	28	28
2009		total taxes rate	taxes on consumption	taxes on labour	taxes on capital
real GDP growth rate	Pearson Correlation	.218	-.123	-.013	.684**
	Sig. (2-tailed)	.264	.533	.947	.000
	N	28	28	28	28

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Source: authors' own computations

The analysis of correlation between economic growth rate and total rate of taxation can be seen that overall, there is an inverse relationship, i.e. increasing the tax rate in effect unfavourably affects growth. The exception is in 2009 when there is no significant correlation registered. It is important to adopt countercyclical fiscal measures as market intervention levers and adjustments for economic activity. The same idea is shared by Nouriel Roubini who identified the directions need to be followed by fiscal policy during an economic crisis, namely (Roubini N., Mihn S., 2010):

- Increase public spending on investment, even if this requires expenses incurred on the budget deficit;
- Fiscal loosening through tax cuts that encourages, at least theoretically, consumers to consume more and thus to boost market demand;
- Making direct payments by the state to social disadvantaged groups.

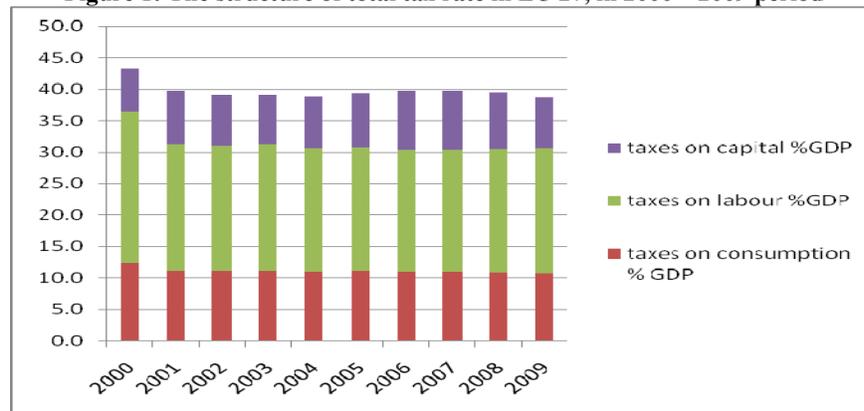
Even if Roubini agrees with these three types of state fiscal and budgetary interventions during crisis, in order to stop the economy from freefall, is aware of the major risk associated with these measures applied simultaneously, namely that of strong increase of public debt: "*fiscal policy is not a free lunch* (Roubini N., Mihn S., 2010, page 278)". U.S. massively made use during the recent crisis of all three fiscal strategy supporting a total cost of 787 billion dollars in 2009 (Roubini N., Mihn S., 2010, page 277), circumstances which justify the accumulation of huge sovereign debt. Similar measures have been taken in the EU member states, but not too extensive, and not in block. In Romania, for example, the state tried to boost investment, but on lower current expenditures (with goods and salaries), total rate of taxation has not recorded any loss, on the contrary, the tax rates for indirect taxes (VAT and excise) increased, and by the state payments for vulnerable social groups took the form of investment subsidies (i.e. "First Home" program, vehicle fleet renewal program). Romania's public debt increased, but until now has not exceeded the level of 60% of GDP, a level considered sustainable by the EU.

Continuing the analysis of the correlation between the economic growth rate and total tax rate components can be seen that there is an inverse relationship between labour taxation, capital taxation and economic growth in EU member states. Both labour taxes and ones on the capital are part of direct taxes,

so we conclude that a rise in direct taxes will cause a reduction in real GDP growth rate. Instead, between taxing consumption and real GDP growth rate there is no significant correlation. Taxes on consumption are part of indirect taxes, and you can see from Table 1 that in the 10 years analyzed there is usually an inverse relationship between the two indicators, but not significant. For these reasons, Romania did in July 2010, during the economic crisis, increase in VAT from 19% to 24%, increasing excise duties on tobacco and fuel unit, leaving the direct tax rates unchanged. Thus, the negative impact of increased total taxation (from 27% of GDP in 2009 to 28.1% of GDP in 2010) on real GDP growth rate was minimal (real growth rate of GDP in 2009 to was -6.6% and -1.6% in 2010), because the increase was based on indirect tax rates.

Based on the results of this analysis can be said that in order to stimulate the economic growth based on the fiscal policy is generally indicated to undertake a decrease total tax rate due to decrease taxes on labour and capital, meaning distorted taxes. Especially labour tax rate should be decreased because it has a high share in forming the overall rate of taxation (see chart 1).

Figure 1: The structure of total tax rate in EU 27, in 2000 – 2009 period



Source: authors' own computations based on data from European Commission, Taxation and Customs Union, (2011 edition), *Taxation Trends in the European Union*. Data for the EU Member States, Iceland and Norway.

Related to reducing taxes on labour and capital we do not definitely support the idea to decrease tax rates, but rather applying an incentive regime for deductions to generate private sector investment.

3. Conclusions

Fiscal policy has an important role on the economic development of a state, but at the same time, gives rise to many controversies about the types of measures to be undertaken. From the analysis made in section 2 on EU countries during 2000-2009, shows that between total tax rate (expressed as % of GDP) and real growth rate of GDP there is an inverse relationship, meaning that policy measures tax must be countercyclical nature. Analyzing components of tax rates is observed that the taxation of labour and capital exert the greatest influence on economic growth, consumption taxes do not show a significant influence. The correlation between the real rate of growth of the GDP and the three components of the total tax rate in European Union reveals a link of negative causality between the economic growth and distorted taxes and inconclusive between the non - distorted taxes. According to Barro's classification, the distortionary tax revenues are: personal income taxes, corporate income taxes, social security contributions, property taxes and non-distortionary tax revenues are value added tax, excise duties.

4. References

- Afonso Antonio, Jalles João Tovar, (2012), *The Fiscal – Growth Nexus*, School of Economics and Management, Technical University Of Lisbon, Department of Economics, WP 01/2012/DE/UECE, page 25.
- Afonso Antonio, Jalles João Tovar, (February 2012), *Do fiscal rules matter for growth?*, School of Economics and Management, Technical University Of Lisbon, Department of Economics, WP 07/2012/DE/UECE, ISSN N° 0874-4548, page 5.
- Barro, R., Sala-i-Martin, X. (1995), *Economic Growth*, McGraw-Hill Inc.

- Day Richard H., Chengyu Yang, (2011), *Economic growth and the effects of fiscal policy*, Metroeconomica International Review of Economics 62:1 (2011) 218–234, doi: 10.1111/j.1467-999X.2010.04108.x, page 218.
- European Commission, Taxation and Customs Union, (2011 edition), *Taxation Trends in the European Union*. Data for the EU Member States, Iceland and Norway.
- Obreja Brasoveanu Laura, Brasoveanu Iulian, *The Correlation between Fiscal Policy and Economic Growth*, Theoretical and Applied Economics, page 25, <http://store.ectap.ro/articole/317.pdf>
- Park Hyun, (2010), *Fiscal Policy and Equitable Growth*, Review of Development Economics, 14(1), 121–140, 2010, DOI:10.1111/j.1467-9361.2009.00543.x, Blackwell Publishing Ltd, page 122.
- Roubini Nouriel, Mihm Stephen, (2010), *Economia crizelor. Curs fulger despre viitorul finantelor*, Publica Publishing House, page 278.
- Zagler Martin, Durnecker Georg,(2003), *Fiscal Policy And Economic Growth*, Journal Of Economic Surveys Vol. 17, No. 3, Blackwell Publishing Ltd. 2003, 9600 Garsington Road, Oxford OX4 2DQ, UK and 350 Main St., Malden, MA 02148, USA, page 409
- http://epp.eurostat.ec.europa.eu/portal/page/portal/national_accounts/introduction

RELEVANCE OF ACCOUNTING INFORMATION FOR THE MARKET VALUE OF A COMPANY. CASE STUDY ON THE BUCHAREST STOCK EXCHANGE

MILOȘ Marius Cristian

Ph.D. Assistant Professor, Faculty of Economics, University Eftimie Murgu of Reșița, Reșița, Romania

NICU Ioana

Teaching Assistant/ Ph.D. Student, Faculty of Economics and Business Administration, West University of Timișoara, Timișoara, Romania

MILOȘ Laura Rais

Ph. D. Assistant Professor, Faculty of Economics, University Eftimie Murgu of Reșița, Reșița, Romania

Abstract: *There are many relevant studies, both theoretical and empirical, addressing the relevance of accounting information in assessing the market value of the company, this being one of the most prolific areas of research in recent years. In this paper we bring empirical evidence supporting the hypothesis of a link between book value, earnings and the market value. In this sense, after reviewing the most important theoretical and empirical studies conducted on this subject, we realize an econometric study, on sample of 30 companies, listed on the Bucharest Stock Exchange.*

Key words: market value, book value, earnings, BSE

JEL classification: C 32, D 82, G 14, M 41

1. Introduction

In the late 60s, there were two papers published, considered "the foundation" in the research area concerned. These works have belonged to Ball and Brown (1968) and Beaver (1968). Using a specific methodology, CAPM model, they consider the market price volatility of the company after the publication of the company's financial results. In the next two decades, research line moved towards the efficient market hypothesis.

Several theoretical and empirical publications focused on the relevance of accounting information in explaining the relationship between book value and market value. In this respect, the literature has shown that the book value and the profit obtained by a firm are related to market value (Easton et al., 1992), and that investors react to the financial statements of the company (Ball and Brown, 1968). Sometimes the literature review indicates the manipulations made through financial statements, highlighting the role of accountants. There are opinions that the use of accounting information in valuing the company can be problematic, given the following:

- Accounting indicators are not good economic indicators;
- Doubts about the predictive value of accounting data;
- The existence of semi-strong form market efficiency, which makes the analysis of information not necessarily profitable;

The accounting information and market price are looking forward to reflect the value (capital) of an economic entity and its variation (profit). The problem occurs when testing a connection between them and the establishment of the delays (lags) for completing accurate financial reports. Studies by Ball and Brown (1968), and Firth (1981) have examined several types of disclosure regarding accounting information in the UK: intermediary reports, preliminary disclosure, annual reports. They conclude that there is a positive market reaction to disclosure of company profits for all types of reports, but with different intensities. Foster (1979) argues that there is a weaker market reaction to annual reports, while the publication of intermediary reports determines strong reactions.

Since the 90s, published works which analyzed the relevance of accounting information in assessing the market value concluded that although there is a positive relationship between the two variables, this relation decreased in intensity in recent years. The main reasons for this situation could be: the existence of information asymmetry, the lag of time required for accounting information to be incorporated into market prices and not least, the existing conservatism in accounting.

2. Empirical findings

Dechow (1994) rather found a positive association between accounting profit and the market price, than between the market price and variable cash flow registered. Overall, the results seem to indicate a state of semi-strong form of efficiency in the market. The measured influence is sensitive to the time of publication of financial results and to the credibility regarding the sources of accounting information.

Balachandran and Tanner (2001) analyze the market reaction to publication of information on new share issue for Australian companies. They find that market reaction to the announcement on the day following announcement (day 0, day 1) is statistically significant more for non-industrial companies and mining companies than financial companies. Abad et al. (1998) analyze the influence of consolidated financial statements of unconsolidated respectively on the market value of a sample of Spanish firms. The results show that consolidated accounting information is correlated more with the market value of the company.

Harris, Lang and Möller (1997) make a similar study, but this time analyzing a sample of German companies. Most results seem to confirm the hypothesis formulated, such that the consolidated financial statements have a larger impact on the market value of the company than the unconsolidated. Inoue (1998) evaluates the relevance of information presented in the consolidated and unconsolidated financial statements for a sample of Japanese firms. In order to quantify this relationship, he starts his methodological approach with Ohlson's model (1995) that shapes the market value as a function of the profit obtained. In terms of differentiation between consolidated / unconsolidated financial statements the results obtained are similar to the above studies.

Francis and Shipper (1999) state that the loss of relevance of accounting information for investors, has determined accountants, auditors and those dealing with the production of accounting information to produce changes in accounting standards in order to improve them. However they doubt that the relevance loss happened regarding capital markets. They believe, rather, that the accounting information tends to become more general, addressing a large number of recipients.

But not all studies show the need for more complex accounting information, generating a greater influence on the market value of the company. There are other studies that demonstrate the importance of accounting information in making investment decisions. More recently, Chang et al. (2008) emphasizes the mean-reversing as discussed in the literature, analyzing if the market price follows a random-walk type process or not. They argue that if market prices trend imposed violates the random walk process, it is possible that market prices follow a mean-reversing type process. If market prices reveal a mean reversing process over a long period of time, then they could be predicted based on the accounting information of the company. Therefore, determining the type of process that characterizes the best market price developments is crucial for investors. It is therefore important to see if market prices move along with basic information on that company. There are also other factors that influence the relationship between the two variables, such as capital market mechanisms, its institutions, market capitalization, legislation, types of transactions allowed, etc. Therefore, the relationship between market prices and accounting information also depends on the degree of capital market development.

In our opinion, such an argument could be validated especially in the case of emerging capital markets, the transition process due to structural and institutional reasons induce intrinsic short-term volatility. A more recent view stresses that the relationship between market price and relevant information (accounting and non-accounting) remains unchanged over time. In our opinion, this view is questionable, since the learning process for the investors interferes positively on their investment decisions and portfolio construction.

The empirical results obtained over time in the literature are proving that accounting information manages to capture sufficient economic information, which is influencing the market value of the company. We observed that internationally, the literature quantifying the relationship between book value and market value of the company is increasing mainly in the literature that wants to reveal the quality of accounting information. These works (such as for example that of Holthausen and Watts (2001)) are using econometric models, testing accounting information in order to generate international analysis. Within literature there are less discussed econometric event studies, where the focus is on the time of the collection regarding the accounting information, the time lag influencing the market values of shares. This research is extremely important as scientists consider financial statements of the company as a very important factor influencing the behavior of investors.

3. Data and methodological framework

To take into account at least some of the existing differences in the sample of companies we selected 30 companies from those listed on the capital market belonging to four different sectors (sector 1 – energy sector, comprising six companies, which are active in the field of energy resources, energy services and equipment: SNP, ENP, OIL, PEI, PTR, DAFR, sector 2 - equipment sector, including eight companies, active in the field business area of durable goods, technology and capital goods as machinery: CMP, EPT, ELJ, MEF, SNO, TBM, UAM, ECT, sector 3 – sector of materials, comprising eight companies active in the field of raw and basic materials, consumer goods, capital goods as construction: BRM, MPN, MJM, ZIM, SRT, COMI, COTRA, IMP, sector 4 - the chemical sector, including eight companies, the object of activity being of pharmaceuticals, medical services, and other chemicals: CBC, OLT, ROCE, PPL, STZ, ATB, SCD, AZO) and the obtained results were interpreted separately. Data were taken from the site of Bucharest Stock Exchange (www.bvb.ro) and site www.ktd.ro and the analysis covered the period 2002-2010.

Clearly, the criteria of separating the four sectors could be criticized, being considered too conventional or heterogeneous, given the different size of companies and sub-fields of their activity. However, separation of areas aimed at providing more or less similar and sufficient data.

According to Aleman and Costa (2006) the methodology considered uses as the dependent variable the market value (closing price of last trading day of March of each year) and as independent variables the book value of the company and earnings per share recorded each year. Therefore, the multifactor regression as pool type, used to quantify the relationship between book value, earnings per share and market value of the company will turn into:

$$P_{it} = \alpha_0 + \alpha_1 VC_{it} + \alpha_2 EPS_{it} + \varepsilon \quad (1)$$

where:

P-share price on 31.03 year N +1,

VC - book value of the firm, on 31.12.N;

EPS - earning/share in N;

4. Results

Further on, we present the results obtained from the econometrical studies (Table 1, 2, 3, 4).

Table 1: Results for the energetic sector

Dependent Variable: MKV				
Method: Pooled EGLS (Cross-section SUR)				
Sample: 2002-2010				
Included observations: 9				
Cross-sections included: 6				
Total pool (unbalanced) observations: 53				
Linear estimation after one-step weighting matrix				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ACCV	1.105876	0.148087	7.467738	0.0000
EPS	0.320699	0.076509	4.191648	0.0001
Weighted Statistics				
R-squared	0.364096	Mean dependent var	0.773503	
Adjusted R-squared	0.351627	S.D. dependent var	1.134465	
S.E. of regression	0.913489	Sum squared resid	42.55759	
F-statistic	29.20073	Durbin-Watson stat	1.743707	

Prob(F-statistic)	0.000002
-------------------	----------

Source: authors' computation

Following the results, we can conclude the following:

- the estimated coefficients of the independent variables are statistically relevant in the case of the 6 companies forming the energetic sector. Standard error values of the coefficients of regression function are small compared with the values of the coefficients, which strengthens the validity of the estimations;
- the results reveal a strong direct relationship between the independent variable, the company's book value and the dependent variable, the market value of the firm, results also show a direct relationship, but weaker, between earnings per share and the same dependent variable;

The coefficient of determination of the model has a very high value (0.36), which proves the validity of the model considered, but shows that an important part of the change in the enterprise market value is explained by other independent variables which were not taken into account. Durbin-Watson test indicates the presence of some autocorrelations in the residuals. Overall however, the quality of the model can be described as satisfactory.

Table 2: Results for the equipment sector

Dependent Variable: MKV?				
Method: Pooled EGLS (Cross-section SUR)				
Sample: 2002-2010				
Included observations: 9				
Cross-sections included: 8				
Total pool (balanced) observations: 72				
Linear estimation after one-step weighting matrix				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ACCV?	0.561635	0.012385	45.34845	0.0000
EPS?	-0.000319	8.05E-05	-3.963783	0.0002
Weighted Statistics				
R-squared	0.966955	Mean dependent var	2.489703	
Adjusted R-squared	0.966483	S.D. dependent var	5.520702	
S.E. of regression	1.010715	Sum squared resid	71.50817	
F-statistic	2048.309	Durbin-Watson stat	1.930915	
Prob(F-statistic)	0.000000			

Source: authors' computation

According to the results, we can conclude the following:

- the estimated coefficients of the independent variables are statistically relevant in the case of the 8 companies belonging to the equipment sector. Standard error values of the coefficients of regression function are small compared with the values of the coefficients, which strengthens the validity of the estimation.
- results reveal a direct relationship between the book value and the market value of the company, but the results show an inverse relationship, between the profit per share of the company and the market value of the company.

The coefficient of determination of the model has a high value (0.96), which proves the validity of the model considered, showing that much of the change in the enterprise market value is explained by the independent variables taken into account. Durbin-Watson test indicates the presence of weak "left" autocorrelations regarding the residuals. Overall however, the quality of the model can be described as satisfactory.

Table 3: Results for the material sector

Dependent Variable: MKV?				
Method: Pooled EGLS (Cross-section SUR)				
Sample: 2002-2010				
Included observations: 9				
Cross-sections included: 8				
Total pool (unbalanced) observations: 69				
Linear estimation after one-step weighting matrix				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ACCV?	-0.003045	0.000194	-15.70084	0.0000
EPS?	9.837798	0.732226	13.43547	0.0000
Weighted Statistics				
R-squared	0.827364	Mean dependent var	0.746138	
Adjusted R-squared	0.824787	S.D. dependent var	2.078843	
S.E. of regression	0.870172	Sum squared resid	50.73232	
F-statistic	321.0990	Durbin-Watson stat	1.490348	
Prob(F-statistic)	0.000000			

Source: authors' computation

Following the results, we can conclude the following:

- the estimated coefficients of the independent variables are statistically relevant in the case of the 8 companies that form in our case the material sector. Standard error values of the coefficients of regression function are small compared with the values of the coefficients, which strengthens the validity of the estimation;
- results reveal an inverse relationship between the book value and the market value of the company, but the results show a direct and very strong relationship between earnings per share and the same dependent variable;

The coefficient of determination of the model has a relatively high value (0.82), which proves the validity of the model considered, showing that much of the change in the enterprise market value is explained by the independent variables taken into account. Durbin-Watson test indicates the presence of "left" autocorrelations in the residuals. Overall however, the quality model can be described as satisfactory.

Table 4: Results for the chemical sector

Dependent Variable: MKV?				
Method: Pooled EGLS (Cross-section SUR)				
Sample: 2002-2010				
Included observations: 9				
Cross-sections included: 8				
Total pool (balanced) observations: 72				
Linear estimation after one-step weighting matrix				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ACCV?	0.265073	0.022555	11.75237	0.0000
EPS?	-0.382807	0.091625	-4.177955	0.0001
Weighted Statistics				

R-squared	0.705364	Mean dependent var	0.311299
Adjusted R-squared	0.701155	S.D. dependent var	1.764071
S.E. of regression	0.964360	Sum squared resid	65.09928
F-statistic	167.5813	Durbin-Watson stat	1.665322
Prob(F-statistic)	0.000000		

Source: authors' computation

Following the results, we can conclude the following:

- the estimated coefficients of independent variables are statistically relevant in the case of the 8 companies that form in our case the chemical sector. Standard error values of the coefficients of regression function are small compared with the values of coefficients, which strengthens the validity of the estimation.
- results reveal a direct relationship between the book value and the market value of the company, but the results show an inverse relationship between income per share of the company and the same dependent variable;

The coefficient of determination of the model has a relatively high value (0.70), which proves the validity of the model considered, showing that much of the change in the enterprise market value is explained by the independent variables taken into account. Durbin-Watson test indicates the presence of "left" autocorrelations in the residuals. Overall however, the quality of the model can be described as satisfactory.

Stationarity tests suggest that within the unit root processes can be identified certain individual unit-root and, consequently, there are systematic deviations in the assessments made on the basis of empirical models (Table 5). This result is not surprising given the small size of the set of analysis. Probability that the series is nonstationary is very low (actually shown by tests Augmented Dickey-Fuller ADF and Phillips Perron PP), resulting from this that the series is stationary. Overall, the quality model can be described as satisfactory and their can be drawn conclusions based on the estimated model.

Table 5: Results of unit root tests regarding residuals

Exogenous variables: Individual effects

Automatic selection of maximum lags

Automatic selection of lags based on SIC: 0 to 1

Newey-West bandwidth selection using Bartlett kernel

Energetic sector

Method	Statistic	Prob.**	Cross-Sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-9.26575	0.0000	6	44
Breitung t-stat	-2.14206	0.0161	6	38
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.84635	0.0000	6	44
ADF - Fisher Chi-square	43.1158	0.0000	6	44
PP - Fisher Chi-square	31.7597	0.0015	6	47
Null: No unit root (assumes common unit root process)				
Hadri Z-stat	0.55770	0.2885	6	53

Equipment sector

Newey-West bandwidth selection using Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
--------	-----------	---------	----------------	-----

Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.65449	0.0001	8	63
Breitung t-stat	-1.93470	0.0265	8	55
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.01402	0.1553	8	63
ADF - Fisher Chi-square	21.7192	0.1525	8	63
PP - Fisher Chi-square	20.8303	0.1851	8	64
Null: No unit root (assumes common unit root process)				
Hadri Z-stat	0.98508	0.1623	8	72

Material sector

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-24.6638	0.0000	8	57
Breitung t-stat	-0.26575	0.3952	8	49
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.50859	0.0000	8	57
ADF - Fisher Chi-square	34.7725	0.0043	8	57
PP - Fisher Chi-square	31.2920	0.0123	8	60
Null: No unit root (assumes common unit root process)				
Hadri Z-stat	6.06082	0.0000	8	69

Chemical sector

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.93186	0.0017	8	62
Breitung t-stat	-2.70119	0.0035	8	54
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.78498	0.2162	8	62
ADF - Fisher Chi-square	24.5075	0.0790	8	62
PP - Fisher Chi-square	24.3904	0.0813	8	64
Null: No unit root (assumes common unit root process)				
Hadri Z-stat	1.41025	0.0792	8	72

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.
Source: authors' computation

5. Conclusions

The literature proves that the financial statements but also basic accounting information are really significant for decision makers within companies. We tried to reveal also the fact that such information may determine changes regarding the market value of the enterprise. In order to obtain valid results it is important to consider economic enterprises from various fields of activity. Our econometrical testing proves the high correlation between accounting information and market value of economic entities. The coefficient R-squared is extremely high for all the sectors considered, excepting the energetic sector. It is also important to underline the direct existing relations between book value and market value of enterprises. We consider that our results confirm previous studies and show the high relevance and the importance of accounting information when valuing enterprises. It is also of future interest to develop more complex models considering also other explanatory variables.

6. Acknowledgements

This work was cofinanced from the European Social Fund through Sectorial Operational Programme Human Resources Development 2007-2013, project number POSDRU/1.5/S/59184 „Performance and excellence in postdoctoral research in Romanian economics science domain”.

This article is a result of the project „Creșterea calității și a competitivității cercetării doctorale prin acordarea de burse”. This project is co-funded by the European Social Fund through The Sectorial Operational Programme for human Resources Development 2007-2013, POSDRU/88/1.5/S/49516, coordinated by the West University of Timișoara in partnership with the University of Craiova and Fraunhofer Institute for Integrated System and Device Technology – Fraunhofer IISB

7. References

- Balachadran, T., (2001). *Bonus Share Issues and Announcement Effect: Australian Evidence*, available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=288743
- Ball, R., Brown, P. (1968). An Empirical Evaluation of Accounting Income Numbers, *Journal of Accounting Research*, 6 (2): 159-178.
- Beaver, W.H. (1968) The Information Content of Annual Earnings Announcements. *Journal of Accounting Research*, 6 (Supplement): 67-92
- Chang, Hsu-Ling, Chen, Y., Su, C., Chang, Y. (2008) The Relationship between Stock Price and EPS: Evidence Based on Taiwan Panel Data. *Economics Bulletin*, 30 (3) : 1-12
- Dechow, P.M.(1994) Accounting Earnings and Cash Flows as Measures of Firm Performance. The Role of Accounting Accruals. *Journal of Accounting and Economics*, 18: 3-42.
- Firth, M. (1981) The relative information content of the release of financial results data by firms. *Journal of Accounting Research* 19 (Autumn): 521-529
- Francis, J., Schipper, K. (1999). Have Financial Statements Lost Their Relevance?. *Journal of Accounting Research*, 37: 319-352.
- Foster, G. (1979). Accounting policy decisions and capital market research. *Journal of Accounting and Economics*, 1979
- Harris, T. S., Lang, M., Möller, H.P. (1997) *Unconsolidated Versus Consolidated Accounting Measures: Empirical Evidence from Listed German Companies*, paper presented at the 20th Annual Congress of the European Accounting Association (Graz, 1997).
- Holthausen R.W., Watts, R. (2001) The relevance of the value-relevance literature for financial accounting standard setting, *Journal of Accounting and Economics*. Vol 31: 3-75
- Klimczak, K., Szafranski, G. (2010) *Divergent patterns in relevance of accounting numbers for stock valuation in France and Germany*, available at <http://www.findecon.uni.lodz.pl/remository/func-showdown/57/>
- Ohlson, J.A. (1995). Earnings, book values and dividends in security valuation. *Contemporary Accounting Research*, 11(2): 661-688

ASPECTS REGARDING FISCAL HARMONIZATION IN EUROPEAN UNION

MOLDOVAN Iosif

Ph. D. Assistant professor, Faculty of Economics, Lucian Blaga University of Sibiu, Sibiu, Romania, iosif.moldovan@ulbsibiu.ro

Abstract: *Specific issues of public finance in general and taxation in particular have been always considered an essential attribute of a national state sovereignty. In the modern times, taxation due to its complexity and the vast area of regulation has an influence on national economy but also influences other states due to the international treaties. In the European Union, each Member State has the responsibility to promote and implement fiscal policies. The State then delegates some of its competences to the local authorities, based on the existing administrative system. In future European Union priorities will be different, the concept of tax harmonization will be accepted, sometimes up to the idea of uniformity, but the main objective will be to ensure that fiscal policies developed by a Member State will not influence negatively other states, and to provide full and real sovereignty for all EU citizens.*

Key words: directive, fiscal harmonization, fiscal competition, Member States, tax system

JEL classification: H 20

1. History

The process of tax harmonization in the European Union has several time references. Thus, regarding enterprises taxation two directives and a convention, approved on the Council of June 23rd, 1990 are still in force. An approach of tax harmonization at EU level is reflected in a recommendation from 1993 which proposed the Member States different taxation for residents and non-residents.

In the same direction, on October 1st, 1997 the Commission gives a statement regarding the fight against harmful tax competition. Until then, this issue was difficult to approach due to the lack of political conditions. As a result, at the economy and finance ministers meeting in Mondorf-les-Bains on September 13, 1997, the Luxembourg Commission Presidency submitted a document as guideline on tax debates. Commission's Communication aimed to define the concept of coordinate of harmful tax competition and to give guidelines on the tax structures of the Member States.

Another important moment took place on December 1, 1997 when the Council adopted fiscal measures designed to boost fiscal coordination in the European Union. The Commission used the "enhanced coordination" procedure instituted by the Amsterdam Treaty and developed by the Treaty of Nice. This procedure enabled the Commission to appoint a group of at least eight Member States, endorsed by the Council that will cooperate on a given topic not to make legislative proposals but to recommend ways to eliminate tax obstacles.

The idea of budget and fiscal policy coordination has emerged as serious problem due to international financial crisis, the euro crisis and sovereign debt crisis.

2. Fiscal Sovereignty

Analyzing tax harmonization inside the European Union, should be recognized that taxation and W are related to a nation's culture and education. Without doubt, the right to set taxes, to impose and collect levies compulsory tax was and will always be an attribute of national sovereignty and in its absence the states may not fulfill their roles and functions in implementing economic, social and cultural policies. Based on this right, a state tax system is build to provide a set of financial and economic levers used as tools "in influencing consumption, encouraging savings and shaping the organization of private enterprises. (Brezeanu P., 2007)

These issues need to be reconsidered inside the European Union, where the fiscal policy is essential for all Member States within the limits imposed by the Treaty on European Union. Actions of a Member State regarding taxation and in general budgetary issues have a "windshield effect" in the budgeting process of the European Union. From this perspective, Member States are required to work in taxation, to promote common policies or, at least to harmonize and coordinate taxes.

In the direct competition between direct and indirect taxes the later requires a high level of harmonization, because it's affecting the free movement of goods, services and capital. Moreover, fiscal harmonization of indirect taxes evolved significantly after the new arrangements for excise duty

and VAT inside Union borders took place following the cancellation of tax borders and customs checks. This is a significant step because the first condition of consumption taxation is to be neutral and to have no influence on the free movement, services, capital and the competitive conditions of the free single market.

The need for coordination in the field of direct and indirect taxation is a goal pursued both by individuals and companies seeking solutions to reduce the tax burden. Disregarding this goal can generate unfair competition between EU Member States.

This means that, the approach of fiscal harmonization or coordination at EU level will not reach the goal if it will only concern the amount of tax levy required in each Member State. The complex process of European integration, encouraged by the introduction of euro, leads to complex interactions between the different countries tax systems, systems in need of review and coordination. Member States will have to accept and adopt common measures to adapt their tax systems to the changes imposed by social needs. The issues generated by the new EU tax treaty are eloquent in this respect.

Tax harmonization effort is a cumbersome process as the European Union respects Member States' fiscal sovereignty, and has no responsibilities in the implementation of taxes. EU plays only a subsidiary role in fiscal policy (Lithuanian Free Market Institute, 2006) has to follow the goal of ensuring interstates compatibilities in accordance with the objectives of the Treaty establishing the European Communities without standardizing national tax systems. Moreover, in Chapter 1 - The Union's own resources, Article 311 of the Treaty establishing the European Community, requires fully finance the budget from own resources, in direct correlation with the ability to pay of each Member State. (Art. 311, Treaty on European Union)

3. Arguments and counterarguments of tax harmonization

Tax harmonization argument needs to be analyzed together with several factors that can influence it and a number of commands that should be considered by the European Union. Thus tax harmonization or coordination must provide:

- competition in the single market;
- the existence of a single market (free trade) by eliminating the taxation;
- free movement of capital;
- efficient resources allocation;
- non-discriminatory tax treatment at national level harmonized with of intra-Union taxation;
- maintaining the tax evasion within acceptable limits ;
- reducing tax burdens on contributors and tax revenue management function for fiscal institutions;

The literature claims that tax harmonization provides conditions to eliminate barriers to free movement of goods, services and capital within the EU. Creating a single market and to ensuring free trade within the EU are in fact a reality, the question is whether tax harmonization should lead up to tax uniformity.

Some voices claim that the existence of unified tax rules (harmonized in the theoretical sense of the term) does not have a significant contribution to trade liberalization. Rather it is argued that diversity is not a barrier to free movement, but is an incentive for trade.

This approach does not mean that harmonization or more exactly tax centralized coordination is no needed in order to encourage and stimulate trade. The idea that central tax harmonization generates harmful effects of free trade is incorrect and void.

From a fiscal perspective, the arguments in favor of implementation of a functional Single Market and of free trade signify that common rules of taxation can influence, from a fiscal point of view the activities of transnational companies. SMEs are less affected because they operate only in the national economic space, respecting national regulatory tax. In this scenario, the tax harmonization of European companies generates effects on the single market but the compliance to the new regulations will have several costs.

This approach starts from the premises that the existence of different tax rules in the Member States leads to a competitive market and the fiscal regulations imposed to the participants are as important as their freedom of choice. If a market participant perceives disturbing factors in a particular state, it may choose to leave that economic environment at any time and to choose another one that provides favorable conditions, for instance lower tax rates.

An important debate topic is represented by the competition between states. Each state is interested to have taxpayers that are involved in and develop "upstream" and "downstream" business partnerships and pay taxes within area of the State's competence. The problem arises when the tax base diversity is eliminated and common market operators are deprived of the possibility to choose. In this respect, fiscal harmonization should not justify a deterioration of the fiscal system because business environment requires favorable conditions for development, not non-stimulating tax uniformity.

The foreshadowing of a centralized system of government in the European Union can be considered a danger, but competition should not be evaluated only in fiscal terms, but also in terms of public goods provision. Following the logic imposed by tax harmonization, providers of public goods will have to comply with an imposed and accepted set of general rules.

The remaining major issue is related to the non-harmonized different taxation levels, leading to barriers in the equitable distribution of public funds. An approach that will lead to a more efficient distribution at the European Union level through tax harmonization, should target tax reductions in general and establishing a maximum level of taxation inside EU as levies quota in GDP. This way tax differences can be adjusted either by reducing or increasing tax rates reported at the possibilities of expression of each state, but also to motivate and underpin the budget levies required.

The direct Gain consists in the competition to decrease tax rates by some Member States. Free movement of capital generates a constant and strong pressure on decision makers responsible in tax, in order to reduce the tax burden by reducing tax rates by Member States. Maintaining low tax rates leads to a decrease in revenues, and in this case tax harmonization would be necessary to ensure the needed national budget revenues. In the current situation, the existence of different tax rates makes multinational companies to use transfer prices to transfer taxable supply to the Member States with lower taxation quotas. As a result, taxes are not paid in the states where the profit has been generated but in the state which provides a lower tax rate. For this reason, the national budgets of states with higher tax rates are suffering.

Thus, harmonization of taxation will boost the tax base competition, but cannot be done without analyzing tax rate because by a variety of tax rates and a competition between them will motivate authorities to establish Community tax harmonization limits, possibly by establishing a minimum threshold.

The reverse may be that states apply fiscal reforms, reduce tax rates but expand tax bases to justify reaching the optimal level of taxation. This leads to the assumption that the tax rates have not been established at an optimal level and the tax system can be optimized by reducing them to become credible, because following those adjustments, either revenues expressed in absolute manner nor parts of such taxes are decreasing.

Tax harmonization would be more attractive to taxpayers if eliminates any possibility of double taxation and cancels some practices (transfer prices). The temptation to shift the tax base of the productive members belonging to a multinational company to other affiliates to the same group will continue to exist as long as there is at least one company in the group recording a loss. Considering that each Member State will choose the level of taxation that best suits its interests, it is obvious that tax harmonization creating uniform tax rules, in fact, will not target a single country. (Zodrow, G., Mieszkowski, G., P.) We can conclude that tax harmonization will not protect national budgets by default, but will create tighter regulation of transfer of profit opportunities.

4. Obstacles in the process of tax harmonization

Tax harmonization is a slow process due to its complexity and multiple implications generated, and due to the fact that requires the change of the relevant articles of the Treaty establishing the European Economic Community that need to be approved unanimously.

The implications are obvious for some taxes such as VAT, which can be deducted from the import of goods, applied to the production costs and therefore affect the competitiveness of enterprises.

The tax harmonization process cannot neglect the way taxation system and social contributions structures affect the competitiveness of European economies. For example, in an austerity (public or private) some Member States had to maintain investments in research and development or active measures to promote employment through strict fiscal measures.

The risk of not adopting harmonized fiscal policies in the Member States, lays in the promotion of transnational fraud through free movement of capital given that the single market and single

currency has eliminated the barriers of regulatory nature on the one hand, contributing to elimination of exchange risk and reduced costs of transactions on the other.

These issues require a global analysis because the risks of uncoordinated tax competition increase in an environment where technical innovation and global market reinforces mobility services and capital flows, becoming a source of conflict between states in case the coordination is not achieved, at least at the enlarged Europe level. (Gaftoniuc, S., 2000)

European Commission can counteract harmful tax competition establishing measures for fiscal coordination which involves:

- developing a code of conduct on company taxation;
- European Commission parallel Communications on state fiscal aid;
- elimination of distortions in the taxation of capital;
- cancellation of withholding tax on cross-border payments of interest and royalties between companies;
- elimination of distortions identified in indirect taxation;

As a matter of fact, provisions of Article 110, Chapter 2 - Tax provisions of the Treaty on European Union expressly prohibit any tax discrimination that directly or indirectly, would provide an competitive advantage of domestic products to the products from other Member States and Article 113 of the Treaty calls for the harmonization of taxes levied on turnover of customs duties and other forms of indirect taxation.

An example of the tax harmonization process is the indirect taxation .VAT was actually the first harmonized indirect tax, since 1977. This tax was reconfigured in 1992 to comply with single market requirements. This step was accompanied by a partial alignment of tax rates applicable to the two types of indirect taxes and the specific arrangements for closer cooperation between national authorities.

One of the first measures of tax harmonization at Community level is targeted indirect taxes on capital (Directive 69/335/EEC, as amended by Directive 85/303/EEC).The purpose was aimed on the harmonization of indirect taxes charged by Member States on enterprises capital increase. Transactions covered by Community legislation include enterprises capital formation and conversion, capital increases, issues related to shares and other capital transactions which have influence on the enterprises.

5. Fiscal policy in Romania, present situation

For Romania as a member of European Union, the question arises whether it can withstand rigorous rules imposed by a responsible tax harmonization process. This is an important step, given that the fiscal and budgetary reform in Romania at least in statements has three objectives which can be considered forward a framework for analyze and monitoring.

Those objectives are: limiting the deficit to 3% of GDP by reducing costs; better revenue collection, reducing administrative burden and tax evasion. To ensure a stable macroeconomic framework, laws related to public finance incident were reviewed in March 2010 introducing expenditure ceilings in the public system limiting the number of budget adjustments and eliminating risks of populist decisions before the electoral campaign. (Law for budget and fiscal responsibility no. 69/2010) Also an independent institution, the Tax Council, was created in order to provide forecasting, analysis and recommendations on fiscal policies. The aims of fiscal and budgetary strategy for 2012-2014, are to stabilize the economy, to create conditions for economic recovery and to reach the targets set in the agreement with IMF. A multiannual planning provides a medium term perspective and ensures the tax system predictability.

Among measures taken to reduce taxation and to increase the tax administration efficiency are to simplify and improve tax administration, to support taxpayers in need, to provide tax breaks for business and to change the accounting law.

Regarding tax evasion reduction, the directions are targeting taxpayers with tax evasion potential, and operative intervention in areas prone to tax evasion (excisable products, intra community acquisitions, custom import / export operation, etc.). It should be mentioned that as a result of the tax evasion reduction efforts, the budget deficit was reduced gradually from 7.3% of GDP in 2009 to 6.9% of GDP in 2010 and further to 4.2% of GDP in 2011. The level of collection of revenues increased to 33.1% of GDP in 2011, compared with 31% of GDP in 2009.

Lines of action recently taken by the executive power are directed to:

a. Reducing the budget deficit to 3% of GDP in 2012 (the ESA system) by:

- A prudent increase in public sector wage and pensions, only if economic conditions allow it;

- Adopting a responsible public sector wage policy, which will ensure fiscal sustainability and departmental competitiveness;
 - Changing the EU regulations which will temporarily reduce the share of co-financing by 10 percentage points;
 - Gradually replacing the subsidies granted from state agriculture budget with funds received from the EU budget;
 - Providing a predictable and stable tax system, reforming it with IMF technical assistance to fill gaps and enhance its efficiency;
- b. Reaching the minimum level of excise duty on gas oil according with EU Accession Treaty
- c. Ensuring in 2012 a level of 4% of GDP for capital expenditures related to investments co-financed by EU funds and foreign loans;
- d. Reviewing, updating and publication of public debt management strategy, until end of December 2012;
- e. Reducing taxes and para-fiscal fees, from 237 currently to at most 100;
- f. Combating tax evasion by:
- Improved files selection and better management on computer based risk analysis for a better distribution of tax audit resources;
 - Implementation of control on electronic commerce;
 - Strengthening traffic control;
- g. Revenue collection efficiency and dynamics by:
- Improving the management of arrears collection;
 - Reorganizing the National Tax Administration as to increase efficiency by reducing collection costs;
- h. Providing the legal framework for taxation of large estates;
- i. Encourage voluntary compliance by:
- Stimulating on-line declarations submission and electronic payments;
 - Updating and developing the methodology to automatically establish the taxes and social contributions;
 - Republishing the Tax Code and the Fiscal Procedure Code.

6. Aspects regarding Romanian tax legislation harmonization with the Community legislation

Romania's accession to the European Union requires the harmonization of Romanian tax legislation in Romania with the EU legislation. To achieve this Community regulations are introduced in Romanian law, respectively, in the Tax Code. To ensure correct interpretation and application of the Tax Code provisions, especially those concerning value added tax and excise duties is necessary to study the Community rules, and to harmonize them with the national ones. This process of is performed by The Agency for Fiscal Administration performs this harmonization due to the fact that, in case of different rules Community provisions are applied.

This approach has the advantage that if a Community provision change takes effect on a certain date, the Tax Code must reflect the change taking effect on the same date. (Directive 2006/112/EC) Changes in the legislation can be done in time, considering that a change in the Communitarian legislation takes effect only 6 months after it has been approved. Particular attention should be paid to ensure consistency between provisions concerning value added tax rules, due to the fact that most problems in the common system of taxation are related to the application of this type of tax. (Council Directive 2006/112/EC of 28 November 2006) Notable in this regard are findings which show that the provisions of the Tax Code are not translated correctly, are transposed incorrectly into national legislation leading to confusion or misinterpretation. For example, between "exemption from import duties for small traffic" and "exemption from taxes of imports of small consignments" are essential differences, unmistakable from a tax point of view.

Non-harmonized legislation leads to substantial reduction in budget revenues due to VAT and encourages "legal" tax evasion, because some contributors may use in their benefit different interpretations of certain provisions. This situation can be avoided if a computerized system would exist and would be able to update the EU directives transposed into national legislation together with the enactment modifier, as is the case in domestic legislation. In this line, the European Commission proposed a **common system which calculates the tax base** for companies operating in the EU. This approach is trying to reduce administrative costs and to ensure compliance with regulations and legal

uncertainties currently facing EU enterprises trying to determine their taxable profits and have to comply with the provisions of 27 different national tax systems.

Building a common consolidated corporate tax base will help enterprises to benefit from a system of tax returns transmission, and to consolidate their profits and losses from all over the EU. Common consolidated tax base means overcoming current difficulties and providing companies with a single set of rules for tax base calculation, the possibility of transmitting a single, consolidated tax return, a single administration for their entire activity in the EU. Essentially, reaching this goal, allows each Member State to keep the right to establish its own corporate tax rate intact. The European Commission estimates that EU companies will save 0.7 billion Euro annually by reducing compliance costs and 1.3 billion through consolidation. In addition, companies that want to expand outside borders will be able to save up to 1 billion Euro.

7. Unique business tax proposed by Germany and France

In February 2012, two of the most important EU countries, France and Germany have issued a "Green Paper" on the compatibility of their tax system regarding profit taxation. This followed the joint declaration of the heads of the two countries from August 16, 2011, when they expressed the wish to have compatible profit taxation legislation by 2013. The decision may be considered as a step towards tax harmonization and implementation of a common consolidated tax base on income tax in the European Union (Common Consolidated Corporate Tax Base-CCCTB).

This process started in October 2001, when the European Commission presented a study on income tax in the Member States (Company Taxation Study), and proposed measures able to remove obstacles met by the common market due to national legislation on direct taxes. One of the study's conclusions is that on the long term, Member States should allow EU companies to use a single base (consolidated) tax on the profits made inside the Union. The result led to the creation of a working group which issued ten years after (March 16, 2011), a draft for European directive on Common Consolidated Corporate Tax Base on income tax. The Commission intends to approve the draft at the EU Council in 2013 and in the next two, three years each Member State has to transpose the directive into national legislation. In the eight weeks that followed the draft publication, parliaments of the Member States were able to issue comments related to the draft's implication in the subsidiary principle as presented in the European Union Treaty (principle that establishes the division of competence between the Union and Member States). In conformity with the procedure if a minimum of 18 votes out of 54 available would have been registered, the Commission would've had to reconsider the proposal. The total number of votes was 13, from nine countries (including Romania).

The directive draft proposes that if a company is incorporated in a Member State and has branches in other Member States, the tax base should be consolidated in the parent company and then divided /calculate between firms within the group taking in consideration the following criteria: sales volume, salaries costs, number of employees, assets value.

Advantages of its implementation would materialize:

- Strengthening the tax base by eliminating transactions between group members by not introducing transfer pricing rules;
- Offsetting profits from a location with other location losses;
- Tax rate of each Member State will be decided at national level;
- Optional application of the Directive by taxpayers;
- An equitable redistribution of profit tax revenues in the European Union.
Does not involve the loss of sovereignty of Member States where the subsidiaries are located in matters related to the profit tax rate and exercising fiscal control.
- Decreased costs of formalities required by tax legislation (filing tax returns and reports of transfer pricing);
- Reduce the opportunities for tax payment reduction due to the possibility to compensate the loss of profit in different states or from double taxation elimination. In practice, when in a State revenues are recorded in other the recorded expenses are not considered deductible or in other cases the tax base is displaced in a low tax state.

Some disadvantages may result from the partial loss of the sovereignty of the Member States where the subsidiaries are of an enterprise are located, regarding the profit tax legislation and exercising fiscal control. Even if the tax base will be determined in accordance with the Directive, the national legislation of each Member State shall ensure elements of fiscal sovereignty.

The Impact study presented at the same time with the Directive draft by the Commission takes into consideration 13 European multinational companies and estimates a 2.7% decreasing of the tax base at EU level. Between the Member States, the top three advantaged states were Germany (with an increase of 2.8% from the total tax base at the Union level), Italy and France (with an additional 1.8% and 1.7%). The first three "disadvantaged" states were Finland, Holland and Denmark. In this study, Romania would triple the tax base related to operations conducted by multinational European companies.

If applied, this Directive will favor Romania because: In Romania operate large number of subsidiaries of multinationals, attracted by low costs and high skills level; The current system is disadvantageous because uses rules based on transfer pricing and the branches share of profit is artificially low; calculating the tax base for the parent company and regulating it for subsidiaries according to established criteria (sales, payroll, number of staff and assets) increases the share of profits at subsidiaries level.

To take effect, the draft directive needs to be voted in unanimity in the EU Council. The alternative would be that at least at least nine Member States approve it and then the "enhanced cooperation" procedure is used. Given the need for unanimity, the probability the directive to be approved is small.

There are chances that France and Germany together with a number of Member States to approve it, the latest developments at EU level, including the Stability Pact being a good sign for introducing the Directive. This approach can be successful due to the fact that neither France nor Germany have submitted comments on the proposed project, and, on the contrary, the German Finance Ministry, considers that the directive should be mandatory not optional.

8. Conclusions

The Treaty establishing the European Community does not contain strict provisions relating to tax harmonization. Taxation is designed to encourage the four freedoms stipulated in the Treaty, the movement of goods, persons, services and capital. Significant progress in the taxation field has been achieved by regulating double taxation and the tax treatment of cross-border economic activities. The idea of budget and fiscal policy coordination has emerged as a serious issue due to international financial crisis, the euro crisis and sovereign debt crisis.

In the creation and consolidation of a functional common market, fiscal harmonization doesn't constitute a mean of reaching this goal, but can bring a higher degree of capital mobility considering that the existence of different tax rules applied to multinational companies raises barriers this process and creates poor conditions for the important players in the competitive common market.

Establishing harmonized tax rules does not induce a significant contribution in trade liberalization, but it is recognized that lack of such harmonization stimulates trade. It can be said that at European Union level, tax harmonization applied to European companies do not generate direct effects on the single market because these companies will account for some costs trying to comply to new regulations. But it must be recognized that harmonized tax legislation may influence the development of multinational companies by simplifying the determination and transmission of tax obligations, reducing bureaucracy and may bring a contribution to a balanced budget in the European Union due to a more correct distribution of tax burden. The existence of different tax legislation inhibits effective distribution of resources or the way those resources are distributed.

Tax harmonization in the European Union will be a long process. Harmonization of tax competition effects will be obvious in the extent of which the different tax rates create competition in the field and will encourage national and EU authorities to seek effective and adequate solutions especially regarding corporate taxes and possibly setting a threshold for taxation, target that will be difficult to reach in our opinion.

9. References

- Brezeanu P. (2007) *Finanțe europene*, Editura C.H. Beck, București
- Krogstrup S. (2002) What do Theories of Tax Competition Predict for Capital Taxes in EU Countries? A Review of the Tax Competition Literature, *HEI Working Papers*, Economics Section, The Graduate Institute of International Studies
- Wilson J.D. (1999) Theories of Tax Competition, *National Tax Journal*,
- Comisia Europeană, (2007) *Taxation and Customs Union - Taxation trends in European Union - Data for the EU member states and Norway- Main results*, Eurostat Statistical Books

- Lithuanian Free Market Institute (2006) *Harmonization of the Corporate Tax Base in the European Union*, Analytical study
- Comunicarea Comisiei Europene către Parlamentul European, (1997) A package of measures to tackle harmful tax competition in the European Union, COM(97) 564, 5 noiembrie

BUSINESS FAILURE PREDICTION FOR ROMANIAN SMES USING MULTIVARIATE DISCRIMINANT ANALYSIS

MOSCALU Maricica

Teaching assistant / Ph.D. student, Faculty of Finance, Insurance, Banks and Stock Exchanges / Department of Finance, Academy of Economic Studies, Bucharest, Romania, mari.moscalu@yahoo.com

Abstract: *Business failure prediction is one of special importance for small and medium sized enterprises (SMEs) due to their increased vulnerability. Consequently, the purpose of this paper is to investigate the utility of financial ratios and other non-financial variables to predict business failure using a sample of Romanian SMEs and applying multiple discriminant analysis. The process that leads to failure is analyzed on a three year time horizon prior to failure and the results showed that failure can be accurately predicted with at least three years in advance. The overall accuracy of classification exceeded 77% in all years and increased as failure approached.*

Key words: business failure, multivariate discriminant analysis, discriminant function, prediction, SMEs.

JEL classification: G 33, C 38

1. Introduction

Business failure prediction continues to be a subject of great interest both for academicians and practitioners. Since more than four decades ago, financial research has devoted a great amount of effort to developing and applying newer and more complex methods able to predict more accurately business failure which has resulted in a consistent and growing body of literature at international level. The explanation for such a great research attraction could reside in the anticipated negative consequences of the business failure phenomenon both for society as a whole (Wu, 2010; Bottazzi et al., 2011) and specifically for entrepreneurs, managers, creditors and employees (Watson and Everett, 1996; Wu, 2010; Bottazzi et al., 2011).

While there is a general agreement regarding the negative effects of the business failure, little consensus exists with regard to the definition of the concept (Rogoff et al., 2004; Pretorius, 2009). This is due to an incomplete understanding of the phenomenon and its interdisciplinary character as a research theme (Pretorius, 2009). This incomplete understanding of the phenomenon is reflected in the lack of a theory of corporate failure. If we add to these the inherent difficulties of collecting reliable data, especially for SMEs (Watson and Everett, 1996), then it is understandable that, most often, researchers chose a definition that best suited their data (Watson and Everett, 1996; Pretorius, 2009; Ropega, 2011). Regarding the definition adopted in previous research, we can say that failure was most often seen in the legal sense which implies that a company is considered to be failed if it filled for bankruptcy law protection. Such a legal definition of failure was used, for example, in the studies of Altman et al. (1977), Zavgren and Friedman (1988), McGurr and DeVaney (1998) and Agarwal and Taffler (2008), to mention just a small part of them. Regarding failure definition for SMEs, literature has revealed variations as in the case on bigger companies with bankruptcy being also the most used definition (Lussier, 1995; Pompe și Bilderbeek, 2005; Min și Jeong, 2009). This legal approach for failure will also be adopted in the present paper.

The special interest in small and medium-sized enterprises (SMEs) is motivated by the relative importance of this sector for the economy (Peterson et al., 1983; Franco and Haase, 2010) in different parts of the world and by the high incidence of failure among SMEs (Peterson et al., 1983; Haswell and Holmes, 1989) especially among startups (Franco and Haase, 2010). They represent the majority of the firms as in Japan, for example, where SMEs represent 87% of total number of firms (Harada, 2007). Also, SMEs sector accounts for a great proportion of the total workforce employed, which range from 25% in Japan (Harada, 2007) to 80% in Chile (Lussier and Halabi, 2010). In Romania, in 2010, SMEs represented more than 99% of the total enterprises (including private entrepreneurs) and more than 96% of the total active enterprises in industry, construction, trade and other services sectors, according to the National Institute of Statistics (NIS, 2011). The same annual statistics report that SMEs from industry, construction, trade and other services employs an increasing proportion of the total workforce that reaches 65.9%, contribute by 59.4% to the total sales of the sector and its participation to gross value added formation increases to 50.2%, in 2010. These should be sufficient arguments to support the importance of SMEs sector for every national economy. Unfortunately, SMEs are exposed to greater difficulties and

disadvantages as compared to bigger companies (Franco and Haase, 2010) and leads to a greater propensity to failure, even to bankruptcy.

The present study can be included in the first of the two directions of research described by Crutzen and Van Caillie, 2008) that of business failure prediction. It is oriented to increasing business failure prediction models performance through developing and applying new methods. According to Wu (2010) the current average prediction accuracy is 85%. Business failure prediction is important because it can help decision-makers to avoid failure while providing the investors with the support for their financial decisions (Dimitras et al., 1996). The techniques applied to the problem of business failure prediction can be roughly grouped in two categories (Min and Jeong, 2009): statistical methods and methods based on artificial intelligence. The best known in the first category are discriminant analysis and conditional probability models (logit and probit) while the second category include decision trees, rough sets theory, case-based reasoning, genetic algorithms, support vectors machines, data envelopment analysis and neural networks (Min and Jeong, 2009). Classical statistical models are based on cross-sectional data and consist of a procedure designed to classify businesses into two groups, failed and non-failed (or bankrupt and non-bankrupt) based on a set of financial ratios (Balcaen and Ooghe, 2006).

In this paper, the multivariate discriminant analysis (MDA) will be employed for business failure prediction using a sample of Romanian small and medium-sized enterprises. This method will be presented in greater details in the following section along with sample and variables used. The third section presents the results. A discussion of them is made in section fourth while the fifth section gives the concluding remarks.

2. Research methodology

2.1. Method

As a reaction and an extension of the univariate use of financial ratios, best promoted by the work of Beaver (1966), multivariate analysis of financial ratios was introduced by Altman (1968). The univariate analysis presents the major disadvantage that it can analyze only one ratio at a time while the failure phenomenon is a multidimensional one (Dimitras et al., 1996). Thus, Altman (1968) extended the previous research and combined several financial ratios in a single model in order to simultaneously explore their ability to differentiate between bankrupt and non-bankrupt firms. In order to retain the financial ratios with the great discriminating ability, Altman used the *multivariate discriminant analysis* (MDA) based on a Fisher discrimination function. A Fisher discrimination function is a linear combination of the original variables that best discriminates between groups, i.e. maximizes the ratio of the difference between the group means to the within-group standard deviation (Fisher, 1936). Based on this criterion, the procedure assures that the groups are most dissimilar between them and most similar within them. The resulting function, called the discriminant function, can be written as in equation (1) (Dimitras et al., 1996).

$$Z_i = a_0 + a_1x_{i1} + a_2x_{i2} + \dots + a_nx_{in} \quad (1)$$

Z_i = discriminant score for the firm i

a_0 = intercept

a_1, \dots, a_n = discriminant coefficients assigned to the n predictor variables

x_{i1}, \dots, x_{in} = values of predictor variables for firm i

Using the discriminant function coefficients and the individual values for the variables in the function, a *discriminate score* is determined for each firm in the sample. Based on this score, the firm is classified as failed or non-failed using an optimal cutoff score, namely: if the firm's individual score is lower than the optimal cutoff score, the firm is classified as failed and as non-failed if its score is above the optimal point (Balcaen and Ooghe, 2006). The cutoff score is determined based on the a priori probabilities and the costs of classification errors (Dimitras et al., 1996). There are two types of classification errors: type I error and type II error. Type I error refers to misclassifying a failed firm as non-failed while type II error refers to misclassifying a non-failed firm as failed with the cost of type I error being greater than that of type II error (Beaver, 1966; Blum, 1974). In a real life business prediction problems, which requires setting the value of the ratio of misclassification costs, researchers (Altman et al., 1977; Agarwal and Taffler, 2008) consider that the cost of type I error can be associated with granting a loan that will prove to be non-performing leading to a loss that equals the capital invested, while the type II error is analogous to rejecting a loan that will have proved profitable, the loss being given by the opportunity cost of not investing.

MDA is based on a series of assumptions regarding the data (Balcaen and Ooghe, 2006). These include the requests that: the groups be discrete, non-overlapping and identifiable; the data used be multivariate normally distributed; the variance matrices of the groups be equal; the a priori probabilities membership to groups and the costs of classification errors be specified prior to the analysis; and the absence of multicollinearity between the predictor variables. The non-compliance with the hypothesis of equal variance-covariance matrices across groups requires the use of a quadratic discriminant function instead of a linear one (Eisenbeis, 1977). Nevertheless, research has proved that MDA quadratic has superior performance only for large samples, reduced number of predictor variables and for substantial differences with regard to variance matrices (Balcaen and Ooghe, 2006). Altman et al. (1977) tested both forms and noticed that the global classification accuracy is essentially the same thus the linear form was retained.

Among the well-known discriminant functions for bankruptcy prediction are those developed by Altman (1968), known as the Z-score model, Blum (1974) and Altman et al. (1977), called ZETA™ model. Blum (1974) found that the discrimination between failed and non-failed companies is statistically significant with one to five years prior to failure. The classification accuracy reported in his study ranges from 70% with five, four and three years in advance to 80% with two years in advance and 94% one year prior to failure. Altman et al.'s 1977 model led to a proportion of correct classification of 70% with five years in advance that increases to above 90% with just one year prior to failure.

2.2. Data

Generally, the research dedicated to business failure focused either on firms of different sizes or, when focused on specific size classes, large companies were considered. This can be explained by two factors: the matched-paired research design and by specific difficulties associated with SMEs. *Matched-paired sample* represents a sampling procedure consisting of matching each individual failed firm with a non-failed one using a set of matching criteria, size and industry being the most frequently used. This stratified sample selection procedure was used in studies of Altman (1968), Blum (1974), Zavgren and Friedman (1988) and Tang and Chi (2005) among many others. Through this procedure the comparison of companies that differ with respect to size, industry and other factors is avoided (Lussier, 1995). Thus, business failure prediction studies devoted specifically to SMEs are rare. In addition, research dedicated to SMEs is complicated by the difficulty of obtaining financial data and defining small business (Yoon and Kwon, 2010). The first study for SMEs failure prediction was conducted by Edminster (1972) who also employed MDA. It was followed by those of Lussier (1995), Lussier and Halabi (2010) and Pompe and Bilderbeek (2005) etc.

Regarding industry, due to the specific characteristics of each economic sector, business failure prediction models should take into account these peculiarities (Dimitras et al., 1996) and be restricted to more specific sectors. McGurr and DeVaney (1998) showed that when models developed on mixed samples in terms of industry are applied to a sample based on a single industry the accuracy performance is worse and recommended also focusing on a single industry.

Following this procedure, the sample used in this paper consists of Romanian small and medium-sized companies, defined according to the Romanian law no. 346/2004. Based on this law, are considered SMEs those having less than 250 employees and net sales of maximum EUR million 50 or total assets that do not exceed EUR million 43. Further, companies are classified as micro-enterprises, small enterprises and medium enterprises based on different limits of the same criteria for each of the three categories. The total sample comprises 114 SMEs of which 57 are failed and 57 are non-failed. In MDA, the requirement to have an equal number of companies is imperative because otherwise the group of failed firms is dominated by the other group and this leads to a much lesser hit rate for the first one (Sueyoshi and Goto, 2009). A company is considered failed if a petition to open the insolvency procedure was filled, according to the insolvency law (law no. 86/2006). For the sampled companies, this petition was filled in period 2008-2009. The other sub-sample consists of active companies for which an insolvency petition was not filled until the time of the sample selection. All the companies were selected in 2011 on a random basis from the National Trade Register Office (NTRO) database. In both sub-samples, the same structure was kept: 31 companies are failed/non-failed in 2008 and 26 companies were failed/non-failed in 2009. For the failed companies financial statements data from balance sheet and profit and loss account were collected for three years prior to the year when the insolvency procedure was initiated. This means that for companies that become insolvent in 2008, financial statements were collected for 2007, 2006 and 2005; for those that became insolvent in 2009, data was collected for the

financial years 2008, 2007 and 2006. For non-failed companies, data for the corresponding years were collected in the same manner. All companies are manufacturing companies. Following the recommendations found in literature, the analysis was restricted to a single industry in order to increase the accuracy of prediction and to avoid the potential distortions induced by the industry specific.

2.3. Variables

Most of business failure prediction models are based on financial ratios as predictors. Their use is based on the utility of accounting information which is described by researchers in terms of their predictive power (Beaver, 1966; Libby, 1975) and of users' ability to interpret that information (Libby, 1975). There are also critiques regarding financial ratios. The reflection of a past performance associated with the assessment at historical cost and the sensitivity to managerial manipulation are among the most problematic (Agarwal and Taffler, 2008). The last problem can have even a greater incidence among smaller companies. The lack of a unifying theory of business failure (Dimitras et al., 1996) has led to a lack of a consensus regarding the variables that are the best predictors of failure. Consequently, most researchers relied on previous studies to choose variables. They started with a large set of variables, mostly financial ratios, and then applied different statistical techniques (like factorial analysis) or stepwise procedures in order to reduce the dimensionality of the data (Edminster, 1972; Zavgren and Friedman, 1988; Tang and Chi, 2005; Min and Jeong, 2007). Although some researchers (Dimitras et al., 1996) have recognized the necessity to include non-financial variables in business failure prediction models, few models do incorporate non-financial variables and this is explained by the difficulty to measure such variables. Their importance was mentioned especially for SMEs. A non-financial model, for small firms, is the one developed by Lussier (1995) that was tested in different parts of the world with satisfactory results (Lussier and Halabi, 2010). Among the non-financial variables used in this model are: the entrepreneur's age, education, managerial experience and marketing abilities, employees' quality and the existence of financial control and bookkeeping.

The general approach described above will also be applied in this paper. A review of the literature, consisting in 42 international studies, was conducted and this resulted in very large set of variables that were grouped in categories. For each variable, the frequency with which it appeared in the studies analyzed was recorded. It is important to mention that for each study reviewed only those variables that were included in the final model and were considered important were retained and not the whole initial set of variables. Further, from each category were selected those variables with the highest frequency. This resulted in 32 financial ratios and 1 non-financial variable. Other 2 financial ratios were determined because they were considered relevant for the present study. This set of 35 variables will be reduced using a stepwise method when applying MDA. They are grouped as follows: (a) *Cash-flow*: (R1) self-financing capacity / total debt, (R2) gross operating excess / total debt, (R3) self-financing capacity / equity, (R4) self-financing capacity / total assets; (b) *Profitability*: (R5) net profit / total assets, (R6) earnings before interest and taxes / total assets, (R7) net profit / net sales, (R8) value added / total assets, (R9) carried forward result / total assets; (c) *Taxation*: (R10) total taxes / value added; (d) *Liquidity*: (R11) net working capital / total assets, (R12) current assets / current debt, (R13) quick assets / current debt, (R14) (cash + cash equivalents) / current debt, (R15) cash / current assets; (e) *Leverage and solvability*: (R16) total debt / total assets, (R17) equity / total assets, (R18) current debt / total assets, (R19) long-term debt / equity; (f) *Assets' structure*: (R20) cash / total assets, (R21) long-term assets / total assets, (R22) current assets / total assets, (R23) quick assets / total assets; (g) *Size*: (R24) $\ln(\text{total assets})$; (h) *Growth*: (R25) total assets, (R26) operating revenue and (R27) net sales growth rates; (i) *Turnover*: (R28) net sales/total assets, (R29) inventories / net sales, (R30) net working capital / net sales, (R31) accounts receivable / net sales; (j) *Interest coverage*: (R32) interest expenses / earnings before interest and taxes; (k) *Overdue payments*: (R33) total overdue payments / net sales, (R34) overdue payments for suppliers / net sales. (l) *Age*: (R35) number of years between company's registration with the NTRO and the initiation of insolvency procedure and, respectively, the year when it was considered in activity. All the variables were measured for the entire time horizon included in this analysis – three years before failure. Growth ratios could not be determined for the year three in advance because of lack of data.

3. Results

The stepwise MDA was used in order to derive a business failure prediction model with 1 to 3 years prior to failure. Before proceeding to MDA, a univariate analysis was performed in order to

investigate if financial ratios and other variables possess individual ability to discriminate between failed and non-failed firms on an individual basis. Before starting any analysis data were inspected for outliers.

During the first stage, descriptive statistics showed that the distribution of the variables present extreme values that affect their normality. Thus, the data were winsorized in order to reduce their skewness. Using the Tukey's hinges was determined the spread between the 75th percentile and the 25th percentile. A lower and an upper bound were determined as lower upper/lower bound ± 1.5 times the spread. Values outside this range were considered outliers and were limited to the bounds. After this procedure was performed, the symmetry and thus normality of the distribution has improved.

In the second stage, the existence of statistically significant differences between the two groups was investigated using the following methods: t-test for independent samples, ANOVA (analysis of variance). The assumptions of normal distribution and homogeneity of variance, for each group, was analyzed using the following tests: Kolmogorov-Smirnov, for the null hypothesis of normality; and Levene' test for the null hypothesis of equal variances across groups. Because normality hypothesis could not be accepted for the entire set of variables, a nonparametric test, Man-Whitney U test, was performed in order to investigate the differences between the two groups. This test does not require that data have a specified distribution.

In the third stage, a stepwise MDA was performed. For this procedure, it was used an entry value for significance F of 0.05 and a remove value of significance F of 0.1. Accordingly, all variables for which their significance F was lower than 0.05 entered the model while all variables with significance F greater than 0.1 were removed from the model. This is equivalent with using an F value of 3.92 as an entry value and a value of 2.75 as a remove value. It is important to mention that all initial variables were included in stepwise MDA, not only those that showed significant differences on an individual basis. The explanation for doing this relies in the finding of Altman (1968) that although some variables do not show discriminating power measured individually could become significant in a multivariate context.

Next, the results of the univariate tests will be presented. Due to reasons of limited size, only the most important results will be presented, for all the three years. Generally, t-test and ANOVA have indicated the same variables as being significantly different between the failed and non-failed companies. Unexpectedly, the Man-Whitney U test led to very similar results as compared to the other three methods which may suggest that the lack of normality for some variables was not a major problem. In fact, the request of a symmetric distribution is stronger than the overall normality and this was improved through the winsorizing procedure. Overall, all these procedures showed that there are true differences between failed and non-failed companies with respect to a very large number of variables, in all the years. This is an encouraging result because it means that there is a great potential for discrimination between groups and we can proceed to the next stage, stepwise MDA. According to t-test and ANOVA, 23, 30 and 25 variables in the years 3, 2 and 1 prior to failure showed significant differences between groups at 5% level of significance. The Man-Whitney U test identified 23, 28 and 25 variables, respectively. For each year, the variables identified using the two types of procedure were almost identical.

Table 1: Results of stepwise MDA

Year prior to failure	3	2	1
Variables retained	R14, R33, R32, R9, R10	R14, R27, R32, R9, R7, R29	R13, R31, R34, R10, R8, R32
Toler. (min.)	0.933	0.783	0.758
1-Toler. (R-square) (max.)	0.067	0.217	0.242
Canonical correlation	0.608	0.682	0.724
Wilks' Lambda	0.631	0.535	0.475
Chi-square	50.475	68.133	81.048
Sig.	0.000	0.000	0.000

Source: own analysis

The great number of variables that proved the existence of statistically significant results between the two groups means that there is a great potential for discrimination and for a statistically accurate discriminant analysis, even with three years in prior to failure. All the variables presented in table 1 showed differences between companies that are statistically significant at 0.05 significance level; moreover, a great part of them showed significant differences at 0.01. A MDA analysis was conducted for each of the three years. Next, we proceeded to stepwise MDA. The main results are presented in the table 1.

The sequence in which the variables are presented in table reflect the same sequence in which they entered the model. At each step, the variable the contributed to minimization of overall Wilks' Lambda entered the model. The model with three years in advance contains five variables while the other two include six variables each. To check for multicollinearity between the variables in the model, tolerance value is presented for each variable. This value is a measure of the proportion of variance that can be uniquely attributed to that variable and in our analysis has quite high values (above 0.700) meaning that variables in the model are not highly correlated. R-square, computed as 1 – Tolerance, reflects the correlation between the respective variable and the other variables in the model and has values that slightly exceed 0.200. The value of the canonical correlation increases from 0.608 (year 3) to 0.724 (year 1) so that the correlation between the discriminant scores and the dependent variables becomes increasingly stronger. It should be noticed the value of this coefficient correlation with 1 year prior to failure that exceeds 0.700 and reflects a rather great correlation. Wilks' Lambda lowers from 0.631 to 0.475 (1 means no discrimination between groups). The reduction from year to year in Wilks' Lambda value is not very high but its value in significant at 0.05 in all the years. As expected, the differences between groups are more evident as the year of failure approaches and, consequently, the power of the discriminant function to discriminate between groups increases.

Table 2: Discriminant function coefficients

Year prior to failure	3		2		1	
	Variable	Value	Variable	Value	Variable	Value
Standardized coefficients	R9	0.404	R7	0.330	R8	0.547
	R10	0.311	R9	0.499	R10	-0.485
	R14	0.463	R14	0.260	R13	-0.713
	R32	-0.459	R27	0.424	R31	0.664
	R33	-0.509	R29	-0.314	R32	0.318
Unstandardized coefficients			R32	-0.541	R34	0.444
	R9	4.562	R7	3.428	R8	1.379
	R10	4.937	R9	3.656	R10	-8.368
	R14	2.052	R14	1.402	R13	-1.396
	R32	-1.270	R27	0.844	R31	3.281
	R33	-3.062	R29	-1.850	R32	0.855
	Constant	-0.102	R32	-1.646	R34	4.280
		Constant	0.273	Constant	-0.207	

Source: own analysis

The standardized and unstandardized coefficients of the discriminate function for each year are given in table 2. Standardized coefficients are important because they reflect the relative importance of variables.

Discriminant scores, evaluated at group centroids (whose coordinates are given by the mean values of variables for each group) are presented in table 3. The dependent variable is R0 and takes value of 1 for failed group and value of 0 for non-failed group. In this study, a priori probabilities of group membership and costs of misclassification are assumed to be equal which leads to a cutoff value for the discriminant score (Z_c) equal to zero. This value results, according to Altman et al. (1977), from equation 2.

$$Z_c = \ln \frac{q_1 C_I}{q_2 C_{II}} \quad (2)$$

Where: q_1, q_2 = a priori probabilities of group membership; C_I, C_{II} = costs of type I and II errors. The mean discriminant scores for each group are given in table 3.

Table 3: Discriminant scores for groups centroids^a

Year prior to failure	3	2	1
Group 1: R0 = 1	-0.758	-0.924	1.041
Group 2: R0 = 0	0.758	0.924	-1.041

Source: own analysis; ^a the unstandardized coefficients were used.

The results of the classification performance are reflected in table 4. As method of validation was used the leave-one out procedure which means that each case (firm, in our analysis) is classified using the classification functions derived from all cases except that case. It can be noticed that the accuracy of classification is higher than 70% in all the years and increases from 77.2% with three years in advance to 78.9% with two years and 86% with one year. As expected, the classification accuracy using the cross-validation procedure is lower but the difference could be considered minor and is even zero in year 2. This procedure was also used in Altman et al. (1977). The statistical significance of these classification results was tested using a t-test as recommended by Altman (1968).

$$t = \frac{\text{Proportion_correct_classification} - 0.5}{\sqrt{\frac{0.5(1-0.5)}{n}}} \quad (3)$$

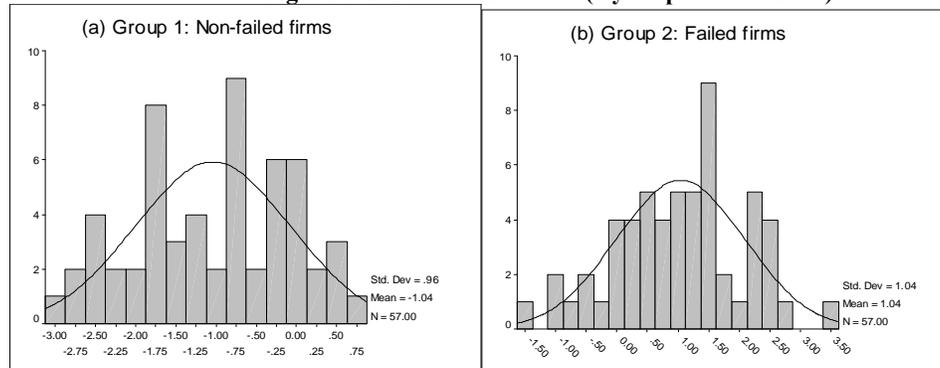
The t-test statistic is computed as in equation 3 where *n* is the total number of cases and 0.5 represents the performance of a random model. The t value, using the cross-validated classification results are: 5.25 for year three, 6.17 for year two and 7.50 for year one prior to failure. All these t values are statistically significant at 0.1% which means that the corresponding models have discriminating power.

Table 4: Classification matrix (%)

Class		Predicted group membership					
		3		2		1	
		R0 = 1	R0 = 0	R0 = 1	R0 = 0	R0 = 1	R0 = 0
Original	R0 = 1	77.2	22.8	78.9	78.9	84.2	15.8
	R0 = 0	22.8	77.2	21.1	21.1	12.3	87.7
Cross-validated	R0 = 1	75.4	24.6	78.9	21.1	82.5	17.5
	R0 = 0	26.3	73.7	21.1	78.9	12.3	87.7
Total	Original	77.2		78.9		86.0	
	Cross-validated	74.6		78.9		85.1	

Source: own analysis

Figure 1: Discriminant scores (1 year prior to failure)



Source: own analysis

For illustration purposes, in figure 1 is presented the distribution of the discriminant scores 1 year prior to failure, using as grouping variable the actual membership (R0). This shows a normal distribution according to Kolmogorov-Smirnov test for normality (based on Lilliefors significance correction which is equal to 0.200) for both groups.

4. Discussion

In this section the statistical results presented in the previous section will be commented, especially with regard to variables retained and their significance.

All variables that proved to be the best predictors with three years prior to failure showed significant differences between failed and non-failed companies also on an individual basis. Based on the standardized coefficients, the importance of the variables is as follows. The greatest contribution at the discrimination power of the function is brought by the ratio of total overdue payments to net sales (-0.509) which is R33. The mean value of this ratio is 17.2% for failed firms and only 4.5% for non-failed

firms which means that failed companies exhibit greater overdue payments. Total overdue payments include payments for creditors (interest and principal), suppliers and public budgets (special budgets, state and local budgets). The next important variables are: (R14) immediate liquidity ratio; (R32) interest expenses to earnings before interest and taxes (EBIT); (R9) carried forward result; and (R10) total taxes/value added. Regarding liquidity, failed companies can cover their short term debt with cash and cash equivalents to a lower extent (0.039) than their non-failed counterparties (0.256). It would have been more intuitively that current or quick ratio to be more important predictors in the more remote years before failure. The proportion of interest expenses to EBIT (the opposite ratio of EBIT to interest expenses that is interest coverage ratio) is almost double for failed companies and shows that interest expenses consume a greater part of EBIT for creditor's reward although none leverage ratio entered the model. Yet, the univariate analysis showed that failed companies are more indebted, both on short as on long term. Significant predictor of failure seems to be the result carried forward from previous financial years. Moreover, while for non-failed companies we can actually talk about net profit carried-forward, failed companies have accumulated losses for many prior years. This could suggest that the insolvency state is preceded by an economic failure. The fiscal pressure, measured as total taxes expenses to valued added show that non-failed companies support an overall greater taxation rate which is somehow unexpected at the first sight. But actually, this could be a message about the company's profitability in the sense that non-failed companies obtain a greater value added that leads to greater taxes to be paid.

Table 5: Mean and standard deviation for variables included in the discriminant functions

Year/Group	Variables					
3	R9	R10	R14	R32	R33	-
R0 = 1	-0.013 (0.062)	0.052 (0.045)	0.039 (0.049)	0.323 (0.475)	0.172 (0.226)	-
R0 = 0	0.052 (0.109)	0.077 (0.077)	0.256 (0.316)	0.120 (0.190)	0.045 (0.065)	-
2	R7	R9	R14	R27	R29	R32
R0 = 1	-0.021 (0.103)	-0.068 (0.156)	0.058 (0.082)	0.021 (0.412)	0.235 (0.213)	0.327 (0.448)
R0 = 0	0.050 (0.089)	0.047 (0.113)	0.219 (0.249)	0.393 (0.579)	0.109 (0.110)	0.081 (0.125)
1	R8	R10	R13	R31	R32	R34
R0 = 1	0.217 (0.397)	0.017 (0.046)	0.407 (0.260)	0.302 (0.249)	0.272 (0.482)	0.101 (0.146)
R0 = 0	0.195 (0.396)	0.060 (0.068)	0.920 (0.674)	0.174 (0.141)	0.090 (0.213)	0.009 (0.015)

Source: own analysis

The analysis with two years in advance revealed some interesting changes in the discriminating ratios. The importance of carried forward results (R9) increases significantly becoming the second most important variable as the standardized coefficients show. This means that failed companies continue to accumulate greater losses. The mean value for failed companies becomes -6.8% along with an increase of the standard deviation while for non-failed it increases slightly. Immediate liquidity (R14) continues to be an important and the only predictor in this class of ratios but its importance reduces. It is now the last variable of importance (its standardized coefficient is only 0.260). Mean values show a small improvement of the liquidity for failed companies (0.058) but accompanied by an increase in standard deviation and a slight decrease for non-failed companies. If we look at mean values, failed companies do not seem to face more difficulties in covering their interest expenses by EBIT but its discriminating ability becomes the greatest among the six variables (- 0.541). On the other hand, few new variables become significant predictors of failure. Among these is (R27) growth rate in net sales (0.424) followed by (R7) net margin (0.330) and (R29) inventories turnover (-0.314). Thus, while non-failed companies exhibit a growth in net sales of about 40%, failed companies grow at a rate of only 2.1%. This is a significant difference and could partially explain the differences in net margin and especially in inventories turnover. Failed companies exhibit lower inventory turnover (85 days for failed companies and 39 days for the non-failed ones) that creates difficulties in increasing their sales and leads further to lower and even negative net margins (-2.1% compared to 5%).

The results are more and more interesting as failure approaches. Regarding liquidity, quick ratio (R13) is now the most important predictor of failure with a standardized coefficient of -0.713. This signifies that not only cash and cash equivalents are important to cover short term debt but also accounts receivable. The mean value for failed companies (0.407) is just about half of that for non-failed companies (0.920). The increase in importance of the accounts receivable as a source of cash for paying short term debt is also shown by the fact that accounts receivable turnover (R31) becomes the second

most important predictor (0.664). On average, while non-failed companies collect their accounts receivable at 63 days, the failed ones do this at 109 days which is a big difference. The profitability of a company as expressed by value added to total assets become the third important predictor although it did not showed significant differences on a univariate basis. As mentioned, this is possible and was signalled first by Altman (1968). Related to the importance of value added, the total tax rate (R10) continues to be an important predictor (-0.485) but now, as opposed to the year three prior to failure, the difference between companies is more evident (1.7% for failed companies and 6% for the non-failed). As insolvency filling approaches, failed companies reveal their problems with accounts receivable collection, on the one side and paying their suppliers, on the other side. This leads to accumulating more overdue payments, especially for suppliers (R34). Overdue payments represent now 10.1% from failed companies' net sales and only 0.9% for the non-failed ones which is more than 12 times. It is interesting also the change in interest expenses to EBIT (R32) which is the least important predictor in the year just prior to failure. This is also evident in the evolution of its unstandardized coefficient through the three years. A small increase in its mean value as compared to the previous year is noticed for failed companies and an even slighter increase for the non-failed ones. As the insolvency filling approaches, the best predictors are those that reflect how failed companies manage their inflows from customers and payments for suppliers. This is a relevant and expected result taking into account the manner in which failure was defined in this paper.

5. Conclusions

The aim of this paper was to investigate the utility of financial ratios and other non-financial variables to predict failure for SMEs stepwise MDA. The process that leads to failure was analyzed on a three year time horizon prior to failure and the results showed that failure can be accurately predicted with at least three years in advance. The overall accuracy of classification exceeded 77% in all years and increased as failure approaches. Three discriminant functions were derived and they comprised only financial variables. The evolution of each of the three sets of variables that were considered as having the greatest discriminating power was analyzed for the three years time horizon and revealed important changes in composition and individual discriminating power. Among the best predictors were those regarding interest coverage (interest expenses to EBIT), liquidity (immediate and quick ratios), overdue payments (total and suppliers overdue payments to net sales), profitability (carried forward results to total assets, net margin and value added to total assets), turnover (inventories to net sales and account receivables to net sales), growth (net sales growth rate) and taxation rate (total taxes to value added).

6. References

- Agarwal, V.; Taffler, R. (2008) Comparing the performance of market-based and accounting-based bankruptcy prediction models, *Journal of Banking and Finance*, 32, p. 1541-1551.
- Altman, E.I. (1968) Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy, *The Journal of Finance*, 23 (4), p. 586-609.
- Altman, E.I.; Haldeman, R.G.; Narayanan, P. (1977) ZETA™ Analysis - A new model to identify bankruptcy risk of corporations, *Journal of Banking and Finance*, 1, p. 29-54.
- Balcaen, S.; Ooghe, H. (2006) 35 years of studies on business failure: an overview of the classic statistical methodologies and their related problems, *The British Accounting Review*, 38, p. 63-93.
- Beaver, W.H. (1966) Financial ratios as predictors of failure, *Journal of Accounting research*, Empirical Research in Accounting: Selected Studies 1966, 4, p. 71-111.
- Blum, M. (1974) Failing Company Discriminant Analysis, *Journal of Accounting Research*, 12, p. 1-25.
- Bottazzi, G.; Grazi, M.; Secchi, A.; Tamagni, F. (2011) Financial and economic determinants of firm default, *Journal of Evolutionary Economics*, 21, 373-406.
- Crutzen, N.; Van Caillie, D. (2008) The Business Failure Process: An Integrative Model of the Literature, *Review of Business and Economics*, 3 (3), p. 288-316.
- Dimitras, A.I.; Zanakis, S.H.; Zopounidis, C. (1996) A survey of business failure with an emphasis on prediction methods and industrial application, *European Journal of Operational Research*, 90, p. 487-513.
- Edminster, R.O. (1972) An Empirical Test of Financial Ratio Analysis for Small Business Failure Prediction, *The Journal of Financial and Quantitative Analysis*, 7 (2), p. 1477-1493.

- Eisenbeis, R.A. (1977) Application of Discriminant Analysis in Business, Finance and Economics, *The Journal of Finance*, 32 (3), p. 875-900.
- Fisher, R.A.; (1936) The Use of Multiple Measurements in Taxonomic Problems, *Annals of Eugenics*, 7, p. 179-188.
- Franco, M.; Haase, H. (2010) Failure factors in small and medium-sized enterprises: qualitative study from an attributional perspective, *International Entrepreneurship and Management Journal*, 6, p. 503-521.
- Harada, N. (2007) Which Firms Exit and Why? An Analysis of Small Firms Exits in Japan, *Small Business Economics*, 29, p. 401-414.
- Haswell, S.; Holmes, S. (1989) Estimating the Small Business Failure Rate: A Reappraisal, *Journal of Small Business Management*, 27 (3).
- Libby, R. (1975) Accounting Ratios and the Prediction of Failure: Some Behavioral Evidence, *Journal of Accounting Research*, 13, (1), p. 150-161.
- Lussier, R.N. (1995) A Nonfinancial Business Success versus Failure Prediction Model for Young Firms, *Journal of Small Business Management*, 33 (1), p. 8.
- Lussier, R.; Halabi, C.E. (2010) A Three-Country Comparison of the Business Success versus Failure Prediction Model, *Journal of Small Business Management*, 48 (3), p. 360-377.
- McGurr, P.; DeVaney, S.A. (1998) Predicting Business Failure of Retail Firms: An Analysis Using Mixed Industry Models, *Journal of Business Science*, 43, p. 169-176.
- Min, J.H.; Jeong, C. (2009) A binary classification method for bankruptcy prediction, *Expert Systems with Applications*, 36, p. 5256-5263.
- Peterson, R.A.; Kozmetsky, G.; Ridgway, N.M. (1983) Perceived Causes of Small Business Failure, *American Journal of Small Business*, 3 (1), p. 15.
- Pompe, P.P.M.; Bilderbeek, J. (2005) The prediction of bankruptcy of small- and medium-sized industrial firms, *Journal of Business Venturing*, 20, p. 847-868.
- Pretorius, M. (2009) Defining business decline, failure and turnaround: a content analysis, *South African Journal of Economic and Management Sciences (SAJESBM NS)*, 2 (1), p. 1-16.
- Rogoff, E.; Lee, Myung-Soo; Suh, D.C. (2004) "Who Done It?" Attributions by Entrepreneurs and Experts of the Factors that Cause and Impede Small Business Success, *Small Business Management*, 42 (4), p. 364-376.
- Ropega, J. (2011) The Reasons and Symptoms of Failure in SME, *International Advances in Economic Research*, 17, p. 476-483.
- Sueyoshi, T.; Goto, M. (2009) Can R&D expenditure avoid corporate bankruptcy? Comparison between Japanese machinery and electric equipment industries using DEA-discriminant analysis, *European Journal of Operational Research*, 196, p. 289-311.
- Tang, T.C.; Chi, L.C. (2005) Neural network analysis in business failure prediction of Chinese importers: A between-countries approach, *Expert Systems with Applications*, 29, p. 244-255.
- Yoon, J.S.; Kwon, Y.S. (2010) A practical approach to bankruptcy prediction for small business: Substituting the unavailable financial data for credit card sales information, *Expert Systems with Applications*, 37, p. 3624-3629.
- Zavgren, C.V.; Friedman, G.E. (1988) Are Bankruptcy Prediction Models Worthwhile? An Application in Securities Analysis, *Management International Review*; 28 (1), p. 34.
- Watson, J.; Everett, J.E. (1996) Do small business have high failure rates, *Journal of Small Business Management*, 34 (4), p. 45.
- Wu, W.W. (2010) Beyond business failure prediction, *Expert Systems with applications*, 37, p. 2371-2376.
- Law no. 346/2004 regarding the encouragement of establishing and developing small and medium enterprises, published in the Official Journal of Romania no. 681/2004 July 29.
- Law no. 85/2006 regarding the insolvency procedure.
- NIS (2011) Romanian Statistical Yearbook, *National Institute of Statistics*.

THE BUSINESS MODEL AND FINANCIAL ASSETS MEASUREMENT

NICULA Ileana

Ph. D. Assistant professor, Faculty of Finance, Banking and Accounting, Christian University, Dimitrie Cantemir Bucharest, Romania, ileana_n2002@yahoo.com

Abstract: *The paper work analyses some aspects regarding the implementation of IFRS 9, the relationship between the business model approach and the assets' classification and measurement. It does not discuss the cash flows characteristics, another important aspect of assets' classification, or the reclassifications. The business model is related to some characteristics of the banks (opaqueness, leverage ratio, compliance to capital, sound liquidity requirements and risk management) and to Special Purpose Entity. The work paper presents some examples concerning the IFRS 9 implementation, highlighting the idea that the new standard stresses the importance of professional judgement, being helpful in accounting policy.*

Key words: business model, SPE/SIVs, securitization, principles-based standard

JEL classification: M 41, G 21

1. Overview

Long debates concerning the liberalization of banking activities have been carried and briefly these could be grouped into four categories: competition, scale and scope economies, institutional stability and conflicts of interest. Nowadays the crisis has raised new issues for the domain regulators. Basel Committee has been issuing and has been improving continuous the guidelines to enhance the quality of banking supervision and to mitigate the risks throughout different techniques. In the last years there has been important progress in the regulatory framework. It has been recognized that regulatory requirements and supervision failed to control financial activities, as banking system had been generated so called SIV/SPEs, operating in *shadowbanking system* (unregulated entities). So the regulators should have taken into account the words of Nobel Prize laureate Paul Krugman „the way to reform banking is to once again make it boring”. The new paradigm of exercising the prudential rules could be ***Dynamic Provisioning Model*** and ***Accounting Rule***.

The concepts of *survey*, *monitor* or *supervision* are used in banking systems to assure that all regulations and laws are fully observed. The aim is the risk control on the macro and microeconomic level. And the practical way of accounting different banking operations has been proving as being a valuable method of the risk assessment through *prudence*, *transparency* and *predictability*.

By definition a traditional bank „accepts voluntarily a mismatch in the term structure of its assets and its liabilities” (Mülbert, 2010). From liquidity point of view acting as traditional banks, they need a continuous access to money (new deposits, short-term loans from interbank market, from central bank) and of course from the money markets. Building a SPE is an active response to this characteristic, as nowadays the power of traditional banks to collect money in form of different types of deposits has been diminishing (for many reasons, not discuss here).

On the other hand, the debt ratio (*leverage ratio*) for credit institutions is higher than in other types of business, so in order to be profitable, the former should have a comfortable spread between the rate of return on assets (*interest rate on assets*) and the cost of liabilities (*interest rate on liabilities*). Anyhow an increase in the volume of credits (bringing much profit) means new loans and an increase in cost (marginal cost tends to increase), as well as an increase in the level of risk. The increase of the leverage ratio brings an increase in risk (the default to pay much more costs). Moreover, monetary authorities have been issuing periodically more sophisticated prudential rules (concerning capital requirements, sound liquidity, risk management, and s.o), and of course the reserve requirements (cash reserve ratio) settled by the Central Banks, according to their monetary policy targets. Therefore even in an ideal market, there is upper limit of increasing the volume of loans, and the increasing of the profit. SIV/SPEs could offer a shortcut to lower costs, avoiding too much risk in the balance sheets (observing different ratios – capital and liquidity requirements), a flexible way of structuring finance according to the market conditions. Choosing a business model is a matter of cutting costs.

Invented by Citigroup around 1988 as a type of fund, the idea behind SPE had been very simple: an entity borrows money by issuing short-term securities bearing low interest and then invests that money

by buying long-term securities bearing higher interest. The initial reason a company might form a special purpose entity is to raise funds for a special event, such as an acquisition or construction. Thus SPE/SIV is not a bad thing by itself. Forbidden something will eventually lead to other innovation (maybe worse). IFRS 9 comes with a new approach of measurement and classification (principles-based standards against rule-based requirements), eliminates some unrealistic rules (such as held-to-maturity), granting a flexibility in making business for each and every bank according to its lines of business. Also the approach of IFRS 9 underlines that nowadays an entity could be a very complex one, its operations being driven by fluid and miscellaneous contexts (markets are very fluid and sensitive) and it is unproductive simply to ban and permanently to verify if the entities conduct their business accordingly.

2. Conceptual framework

IFRS 9 *Financial Instruments* will replace IAS 39 *Financial Instruments: Recognition and Measurement*. Of course an important part of IAS 39 will be part of IFRS 9 and will be implemented on the 1st Jan. 2013. Through *flexibility* and *less extensive rules* (than IAS 39), IFRS 9 will be an important example of **intelligent implementation** of prudential regulations. IFRS 9 is intended to be a *principles-based standard*, more flexible and easy to be implemented; easy in respect of practising a high level of judgement, in-depth knowledge of the banks' operations, markets and subsequent risks.

Being so complex, banks' operations might be divided into lines of business, according to IAS 9. Thus special purpose entities (SPEs) should operate "in the day light", instead of "passing the hot potato" to obscure SIVs in order to make up their financial statements.

IAS 39 states that any asset should be recorded either (1) *loans & receivables* originated in the reporting entity, or (2) *held to maturity*, (3) *held for transaction* and (4) *available for sale*, any reclassification being under strict conditions.

According to IFRS 9, the classification and measurement of financial assets depend on the assets categories (a) *debt instrument*, (b) *equity investment* or (3) *derivative*. Thus the debt instruments are measured at amortised cost (AC) if they meet certain criteria. Otherwise they could be measured at fair value through profit or loss account. Even if the assets satisfy the amortised cost tests, the entity might use fair value (FVO – fair value option) in order to avoid a measurement mismatch (IFRS Outlook, IFRS 9 Financial instruments, issue 60). According to IFRS committee "an accounting mismatch arises if changes in economic conditions affect assets and liabilities to the same extent, but the carrying amounts of those assets and liabilities do not respond equally to those economic changes because they are measured on different bases" (IWG meeting 16 May 2011 Staff Paper).

Equity investments held for trading must be measured at fair value through profit or loss. All derivatives are measured at fair value through profit or loss, unless they qualify and are designated for hedge purposes. Off balance sheets items (as derivatives) are very sensitive to market conditions and the best practise is to use FVO. Therefore IFRS 9 is more flexible than IFRS 39, allowing financial entities to manage better their assets. None the less both IFRS allow alternative treatment for the same item, under IFRS 9 **business model** is a line of judgement, whereas under IFRS 39 the concept has been more implicit.

Simply put, a firm's model should indicate at least three things: (a) „what types of activities the entity is undertaken; (b) the nature of its transactions (products/services sold and bought the markets); (c) the nature of its relationships with the interested parties”. A suggestive example is „If a firm were to set up in a novel line of business and say *our business model is to borrow short at low rates of interest and lend long at higher rates*” (ICAEW Financial Reporting Faculty, 2010). A common listener would say „a bad and dangerous way of making money”. But a well-informed individual would say it is a bank.

In addition business model can be seen at two levels: *strategic* (which industry or sector within industry) and *operational* (practically how the entity gets profits from its portfolios of assets in given circumstances, the level of risk and how it is spread, eventually, outside the entity and the group). A true image of the entity's operations should be reflected by its financial statements, and business model implementation helps all the interested parties (included the regulators) to perform better their analysis. Within IFRS 9 there are two tiered filters assisting the alternative treatments of the assets: (1) *business model* and (2) *cash flow characteristics*.

According to the former the assets can be held to collect contractual cash flows (model named HTC) or to arbitrage the quotations (buying low and selling high).

A business model in line to HTC should used ACO (amortised cost option), or else FVO (fair value option). None the less there is a degree of flexibility in measuring at ACO or FVO (see IFRS

Outlook above). HTC model allows selling of the assets, only whether there is no change in the business model. The judgement of the changing is made looking through two factors, *quantitative* (frequency, volume and values of sales) and *qualitative* (reasons of selling and buying). The guidelines refer to „more than infrequent” and „more than some”. An active management of the assets in order to mark the profit does not qualify for HTC model, being similar to held for transaction under IFRS 39.

3. The business model and the assets disclosure

Monetary assets and liabilities of the financial entities are the main part of their balance sheets and their values modify over time, so it is important to record them as close as possible to their „true” values. In the banking industry, more than in other sectors, the assets and liabilities analysis has become important in order to identify and evaluate the risks and to find the best methods to cover them (hedging).

A peculiar characteristic of the banking assets is their *opaqueness*. For instance it is difficult to assess, internally and externally, the quality of all portfolios, despite the huge development of different models. Moreover, especially the big banks hold miscellaneous assets from the simpler ones (bonds, treasury bills/bonds, certificates of deposit, pure loans) to the more complex ones as Asset-Backed Securities, Collateralized Debt Obligations and Credit-Default Swaps (known under ABS, CDO and CDS). Under IFRS 9 the same type of asset can be part of different portfolios, offering a better image. It is therefore vital to assess more accurately each and every asset of a credit institution. In addition an asset can be generated in order to be held (“originate to hold” concept) or to be sold (“originate to distribute” concept). If an asset is generated in order to be sold, the risk issue does not belong to the entity, so there is no incentive to assess the borrowers' risks and the more the entity sells the more profit will get, on the *short-termism* point of view. On the other hand, the buyer takes over both the assets and the subsequent risks. The credit agencies have rated the financial assets based on the statistical models, not individually. Then they monitor the performances of the pool (at statistical level), and eventually adjust their model to fit the *statistical reality*. Under the capital regulation, banks want to eliminate risky assets, packing and selling them. The process is called securitization and can be conducted in two ways:

- „*true sale securitization* where the underlying assets are sold by the originate entity, removed from its balance sheet and undertaken by another entity SPV and carried in its balance sheet;
- *synthetic securitization* where the underlying assets are carried in the balance sheet of the originate entity and the underlying risk is transferred to SPV by acquiring a synthetic instrument (a kind of insurance) called credit default swap (CDS)”. (European Central Bank, 2007)

The true sale could qualify for ACO or FVO and the synthetic instrument only for FVO.

The end users (ultimate investors) buy the instruments issued by SPE for various purposes. Every counterpart has got its own business models and the transactions should be recorded according to the appropriate standards, in order to disclose the main aspects of the operations.

Being so strictly regulated the banks are stimulated to build SIV/SPE in order to make up the balance sheets, as SPV/SPE have been operating in a gray area (less regulated – shadow banking). On the other hand, financial institutions have become more complex in every aspect, and simply restructuring them, raising barriers there seems to be unpractical. This is a fact accepted by the Basel Committee „...In hindsight, the crisis exposed situations in which regulatory requirements and oversight did not fully capture all the activities of financial conglomerates or fully consider the impact and cost that these activities may pose to the financial system” (Basel Committee on Banking Supervision, 2011).

IFRS 9 states *explicitly* that an entity could have more than one **business model** for its financial assets. *Originate to hold* and *originate to distribute* have been emerged from the business model theory. A financial entity operates on many markets, generates different financial products/services to different customers, undertakes risks, hedges them and s.o., thus it is entitled to have more business models. These are better to be disclosed, from the accounting point of view, in order to analyse the potential gains and losses and subsequent risks.

In IFRS 9 framework:

- business model applies to operational level;
- business model allows alternative treatments of the assets under the same standard.

Until IFRS 9, an entity could choose different standards for the same type of item, in fact, implicitly, using the business model concept. Under IFRS 9 it is important to be clearly defined the business model being used. The choice of the model is not based on the item by item approach. The implementation of standard requires a high level of professional judgement. The IFRS 39 concepts of *held to maturity*, *loans and receivables* and *available for sale* will no longer exist.

Under IFRS 9 „a financial asset qualifies for amortised cost measurement only if it meets both the following conditions:

- the asset is held within a business model *whose objective* is to hold assets in order to collect contractual cash flows: and
- the contractual terms of the financial asset *give rise on specified dates* to cash flow that are solely payments of principal and interest on the principal amount outstanding.

If the financial asset does not meet the both conditions, then it is measured at fair value.”(KPMG, 2008)

Let’s consider a hypothetical credit institution. It could define two line of business: granting commercial loans and issuing credit cards. The former is in line with the core business of a bank (using the resource to lend and the revenue is composed by interest and fees). The loans will be recorded at AC (the appropriate method of measuring the cash flows based on the effective rate of interest and spreading the income throughout the period, taking into account the time value of money and the risk). The latter could be analysed as a hybrid asset. For instance the entity holds them to collect cash flows and then decides to sell (some motives could be: the decline in revenues, the change of the business line etc.). In respect of this model the specific asset is not held only to collect cash flows, neither to get a profit from the market movements. Such a possible behaviour raises the problem of using ACO or FVO. The IFRS 9 states some guidelines using the concepts „more than infrequent” and „more than some” (meaning that such a sale is a model of doing business or let’s say an accident and how much of the portfolio is under consideration). If the entity line of business is to exercise the assets arbitrage (to mark gains according to market movements), the appropriate method is FVO. If the line of business is not as above, but some conditions in the bank’s operations has changed, and the assets had been recorded at AC, the entity can decide for its own benefit to exercise the selling option and IFRS 9 allows it. Thus an asset recorded at AC could be sold before maturity. IFRS 9 offers some guideline in this matter:

- the entity’s policy has change due to various conditions (new management, credit rating declines, tough regulations, shut down part of its business, etc);
- the entity, especially insurers, adjusts its investment portfolio according to the estimated duration (in order to match the timing of payouts);
- the entity must fund capital expenditures, decides to buy another company.

Moreover, if the hypothetical entity (originating entity) decides to sell credit cards portfolio to a securitisation vehicle, its business model does not change, if the entity keeps the control over SPE. The parcel of credit cards will be derecognised from financial statement of the originating entity and will be recognised into SPE. But on the consolidation, the portfolio is recorded into the consolidated group statement (there will be new standards concerning consolidation in order to avoid a misleading image on the entity’s operations and subsequent risks). Thus the criterion of cash flows collection is met for the group, but not for the originating entity. It has practised *originate to distribute* model, another line of business. Judging such a transaction, one should take into account the *frequency*, the *quantity* and the *intent* of managing the entity, in order to reassess the classification of the existing assets. Under IFRS 9 there are specific criteria for reclassification. Does the bank want to change the business model? If so, a reassessment should be done. If not, no reassessment. In the former case, any new assets should be recorded at FVO and the entity will carry two types of assets: the old ones at AC and the new ones at FV. Thus there is a better image of the operations and the subsequent risk in the entity’s statement.

This standard allows the entities, whose business is to buy impaired loans/assets, to record them as being held to maturity, as their business model is to collect the contractual cash flows, pressuring the debtors to pay. If there is an entity which acts as a middle-man in this business, it is obvious that the assets are acquired to be sold. Two business models, two ways of classification, more transparency, flexibility and risk disclosure.

Also the banks are engaged in a lot of transactions based on contract law, creating their own market, on which there are no quotations. Therefore the recognition and appraisal should be made periodically using *evaluation methods*, and IFRS 9 offers some guidelines in order to have a basis for judgement. For instance, factoring facilities, in essence, means that the adherent transfers the right to cash its receivables to a factor, but if the former retains the risk (recourse factoring), the asset can not be derecognised. The latter will collect the cash flows (there is no leverage effect in respect of the sums collected), offers *cash advance*, and retains upfront or periodically the interest and other fees. None the less the factoring facilities can be structured as revolving lines, a type of financing closer to a pure loan. Although this transaction is not a pure loan (it is an asset acquisition) and still qualifies for AC.

On the other hand, a company which buys trading receivables in order to sell them to a bank, for instance, practices a business model requiring FVO. In this way there will be clear separation in the entity's financial statements, a better disclosure of the transactions and better possibility to assess the risk for every line of business.

In respect of business model selection, there are some relevant factors which an entity should consider „tax, limitation on liability and regulations” (ICAEW Financial Reporting Faculty, 2010). For compliance aspects the supervision could be simpler as predictability, prudence and transparency emerged from the accounting policy. Of course business model approach does not eliminate *structural arbitrage*, rather allows the entity to bring into the day light their arbitrage transactions, justifying the reasons behind the business model modification, if any. IFRS 9 gives guidelines and principles to base upon.

Contractually linked instruments are in view of IFRS 9 and the analysis is focused on cash flows criteria (principal and interest, leverage of cash flows, compensation for credit risk). The linked instrument is a structure allowing the division of the securities „in tranches each with distinct risk-return profiles” (Bank of International Settlement, 2005). Therefore the risk of new securities (levels of risk) is separated from the risk of the underlying assets. In other words „a tranche is a specific portion of the securitized portfolio of assets, based on a group of assets with similar risk characteristic” (Mahadevan, 2008). The possible losses will be gradually absorbed, beginning with the highest risk instrument to the lowest risk instrument. This characteristic allows that some classes to be measured at ACO and others at FVO, based upon the risk level. Every tranche has to be analysed under the cash flows criteria, combined with the risks of the tranches and underlying assets.

4. Conclusions

The business model could be a way of consistency in the assets classification and measurement, offering a base for professional judgement, along with other factors. In addition, the business model is consistent with the economic paradigm that market price is an *outside* gauge for a company focused to use assets to produce goods/services. Conversely for a company acquiring assets to sell them, the market price is an *inside* gauge. Therefore business model is helpful in assisting the accounting policy. In addition nowadays there are a lot of relationships in deploying economic activities, and business model could take into accounting this aspect (e.g. which part bears the risk, how the risk is recorded into financial statements, regulation and tax framework, etc.). The financial statements have the part of smoothing the information asymmetry. Of course there can be opportunistic change in the business model to take advantage on the new opportunities, but principles-based standards offer guidance/models for judgement. The concept of business model has been analysed by many economists in the last 90 years (F. Knite 1921, R. Coase 1937, O. Williamson 1975/1985 and s.o.)

5. References

- Bank of International Settlement (2005) *The role of ratings in structured finance: Issues and implications*, Committee on the Global Financial System, January 2005
- Basel Committee on Banking Supervision (2011) *Principles for the supervision of financial conglomerates*, Consultative document, December 2011
- Ernst&Young (2010) *Key IFRS accounting developments affecting banks*, May 2010. Available at www.eycom/Publication.../Key-IFRS-accounting-development...
- Ernst&Young (2010) *Implementing Phase 1 of IFRS 9*, May/June 2011. Available at www.eycom/Publication.../Implementing...
- European Central Bank (2008) *Securitization in the euro area*, Monthly Bulletin, February, 2008
- ICAEW Financial Reporting Faculty (2010) *Business Models in Accounting: The theory of the Firm and Financial Reporting*, 2010. Available at <http://www.icaew.com/en/technical/financial-reporting/information-for-better-markets/ifbm-reports/business-models-in-accounting-the-theory-of-the-firm-and-financial-reporting>
- KPMG (2008) *First impression: IFRS 9 Financial Instruments*, Dec. 2008
- Mahadevan, S. *Credit derivatives insights: Handbook of single name and index strategies*, Morgan Stanley, 4th edition, 2008
- Morgan, P. D. (2002) *Rating Banks: Risk and uncertainty in an opaque industry*, The American Economic Review 92/2002

- Mülbert, O. P. (2010) *Corporate Governance of Banks after Financial Crisis – Theory, Evidence, Reform*, Working paper no. 151/2010

LOCAL BUDGET CONSOLIDATION AS AN INSTRUMENT OF LOCAL AUTONOMY – EVIDENCE FROM ROMANIA

OPREA Florin

Ph.D. Assistant professor, Faculty of Economics and Business Administration, Alexandru Ioan Cuza University, Iasi, Romania, foprea@uaic.ro

CIGU Elena

Ph. D. Teaching assistant, Faculty of Economics and Business Administration, Alexandru Ioan Cuza University, Iasi, Romania, elena28072001@yahoo.com

Abstract: *The establishment of democracy after 1990s in the communist countries from Central and East Europe generated profound social and economic transformation which was accompanied by the necessity to consolidate the local budgets as essential tools for ensuring the administrative and financial local autonomy. We attempt to provide an overall survey on local budgets consolidation over the 1992 in Romania. We will use official statistical data for analysis to identify the variables which explain the local budgets consolidation. We estimate the analysis to confirm the hypothesis that administrative decentralization has surpassed financial decentralization, creating obvious failure of the local public budget system that has not made a contribution to the expectations the economic and social development of local communities.*

Key words: local budget consolidation, local autonomy, decentralization, local government

JEL classification: H 71, H 72

1. Introduction

After 1990, one of the most substantial directions of restructuring in the public budget system in Central and Eastern European countries, namely Romania, was and is the consolidation of local budgets as essential tools for ensuring the administrative and financial local autonomy. In Romania, with this stated goal, public authorities have achieved by several laws measures to strengthen local budgets and to allow highlighting of specific values of local budgets, but the process has developed slowly. Although administrative decentralization and local autonomy as basic principles of organization and functioning of local government have been regulated since 1991 by the Constitution, the actual process was started in 1993, with weak reflections in the budget plan. Practically, the permanent situation in Romania was that administrative decentralization has surpassed financial decentralization, creating obvious failures of the public budget system that has not made a contribution as expected from the overall economic and social development, particularly in the local.

In the following, the paper is structured as follows: section two deals with a brief review of theoretical aspects established by the literature regarding the quality of local budgets as principal instrument of local autonomy and the necessity of its consolidation. The next section concerns the empirical study for Romania in the period 1992-2008. The study is focused on this period to avoid distortions caused by this crisis propagated worldwide, and we want in the further development of our research to quantify separately the impact of financial crisis on economic and social development of local communities. The paper ends with conclusions and references.

2. Theoretical aspects

The local budget affects naturally the social and cultural life in a local community and their future development substantially (Franzke, 2010, p.6). It illustrates the local distribution conditions and reflects the local priorities. Therefore, budgetary planning is an important instrument with various material and procedural functions (see Table 1).

Table 1: Functions of Municipal Budgets

Material functions	Political program function	Budget shall set priorities of the fulfilment of public tasks (quality of municipal services)
	Balance function	Budget shall balance revenues and expenditures
	External steering function	Budget shall change local society according to political priorities
Procedural functions	Planning function	Budget shall specify revenues and expenditures in advance
	Internal steering function	Budget shall control the ongoing administrative acting, establish adjustment between needs and resources
	Control function	Budget shall form the basis for accompanying and additional internal and/or external examinations

Source: According to Mäding 2005, p. 341f., Schwarting 2006, p. 49.

In the context of transition from centralized political and administrative systems to the democratic one, the promoting of local autonomy and decentralization substantially affects the relationship of specific weight of the components of the public budget. In this regard, transfer of responsibilities previously considered of national interest to the local authorities, in the process of administrative decentralization and strengthening local autonomy, must be accompanied by the financial resources. This can occur either by disposal of central authorities for the benefit of local authorities of revenue sources, in whole or in part, either by direct transfer of money from the central budget to local budgets (grants, transfers, shares and amounts deducted). On this basis, the specific weight of local budget in general budget increases. Benefiting from its own resources, local budgets reveal the ability to influence local social-economic environment, representing the appropriate tools to implement local policies decided in terms of autonomy.

In our opinion the consolidation of local budgets involves taking and implementing at local level the dimensions of "sustainable budget" from central government. In this context, the literature has identified four dimensions of sustainability (Schick, 2005, p. 110). Although they are mentioned separately in this paper for analysis, in practice they are applied simultaneously: i) Solvency – the ability of local government to pay its financial obligations; ii) Growth – local fiscal policy that sustains economic growth; iii) Stability – the capacity of local government to meet future obligations with existing tax burdens; iv) Fairness – the capacity of local government to pay current obligations without shifting the cost to future generations.

3. Balance sheet analysis

The legally prescribed local budget is the most important planning and control instrument of administrative-territorial units. The right to approve the local budget is in Romania exclusively reserved to the local council. The local budget itself is based on the budget plan, which has been generated annually on the basis of certain general legal principles. The budget plan covers the planning of all incomes and/or expenditures of a territorial-administrative unit and becomes obligatory in form of a territorial-administrative unit statute. It includes on the one hand the basic part of the budgets, mandatory, so-called functioning section, which contains revenues to finance current expenditures to achieve competence established by law and that current spending, respectively incomes and expenditures of the continuous territorial-administrative units business activities. On the other hand it includes the complementary budgets so-called the development section which contains incomes and revenue and capital expenditure related to implementation of development policies at national, regional, county, regional or local, respectively (Ordinance no. 63/2010).

Romania's transition to democratic system, in terms of public budgets and, thus including local budgets, meant to bring on new bases the budget components and specific links between them. In this context, local budgets have become legally autonomous budget, the Constitution of 1991 expressly establishing government organization based on principles of local autonomy, decentralization and deconcentration, which are adopted and enforced at the local level. As immediate effect, the specific weight of local budgets in Romania's general consolidated budget increased.

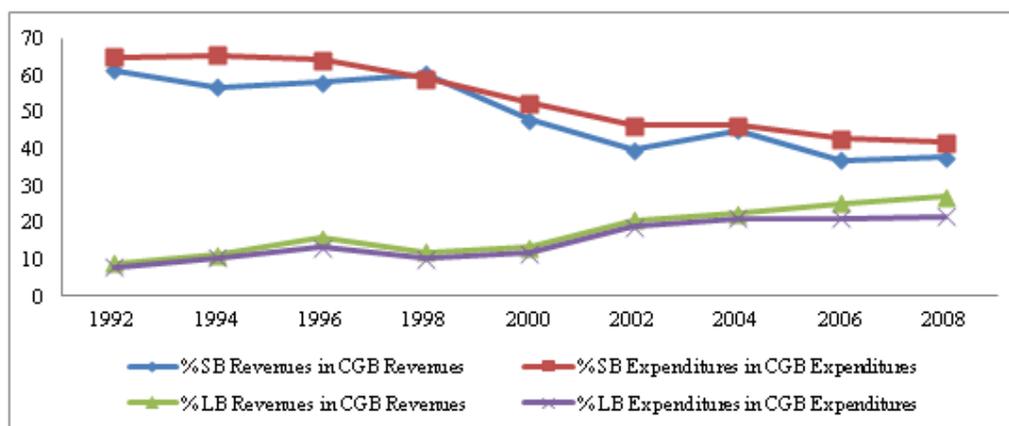
Table 2: The size and the percentage of revenue and expenditure of public budgets in Romania between 1992-2008

Public Budget	Revenues/ Expenditures	1992	1994	1996	1998	2000	2002	2004	2006	2008
Central General Budget (CGB)	CGB Revenues	221.67	1553.70	3159.70	11100.00	25109.54	44901.20	70994.62	109598.89	161266.58
	CGB Expenditures	249.77	1664.26	3681.00	13112.30	28314.05	48852.30	73423.17	119375.60	193128.50
State Budget (SB)	SB Revenues	136.39	886.01	1837.28	6721.55	12034.20	17920.60	32195.40	40698.10	61151.00
	% in CGB Revenues	61.53	57.03	58.15	60.55	47.93	39.91	45.35	37.13	37.92
	SB Expenditures	162.70	1093.03	2372.22	7761.66	14916.80	22682.40	34073.50	51235.60	80886.40
	% in CGB Expenditures	65.14	65.68	64.47	59.19	52.68	46.43	46.41	42.92	41.88
Local Budget (LB)	LB Revenues	19.97	176.72	499.85	1345.42	3344.50	9322.80	15955.80	27708.60	43629.10
	% in CGB Revenues	9.01	11.37	15.82	12.12	13.32	20.76	22.47	25.28	27.05
	LB Expenditures	19.94	173.51	495.52	1338.15	3321.70	9258.80	15540.70	25392.80	42210.20
	% in CGB Expenditures	7.98	10.43	13.46	10.21	11.73	18.95	21.17	21.27	21.86

Source: developed by authors using data from Statistical Yearbook of Romania on www.insse.ro, Bulletins of Ministry of Finance and IMF Reports

Share of income or expenditure, the general government expenditures has increased threefold in 2008 compared with 1992, whereas for the state budget, the revenue and expenditure in total income or expenses of general consolidate budget decreased almost one third over the same period.

According to the table, the involvement of local budget in mobilization of revenue and public expenditures increased, with some interruptions, over the period analyzed, against the state budget as a result of democratization containing essential the decentralization and deconcentration, promoted in Romania. However, the revenues and expenses involved, local budgets in 2008 were about half from the specific weight of the state budget in general consolidate budget, suggesting that central government still retains a wide range of tasks. Interesting developments are raised by their designs if they are put in question in nominal, not in terms of their specific weight, as can be seen from the figure below:

Figure 1: The evolution of income and expenditures of state and local budgets in Romania between 1992-2008

Source: developed by authors using data from Statistical Yearbook of Romania on www.insse.ro, Bulletins of Ministry of Finance and IMF Reports

The figure shows the evolution towards convergence of the weights recorded by revenues and expenditures of state and local budgets in total revenue and expenditure of the general consolidate budget, as effect of reconsideration of the division of powers of public authorities at both levels of government and the desire to strengthen the local budgets as an instrument of territorial autonomy. However, it is noted that the revenue and expenditure budget components are closer for local budgets, for which is expressly provided the principle of equilibrium budget in comparison with the state budget, where the differences are quite large.

Increasing evolution of local budget expenditures was mainly due to the fact that the period in question was land for carrying out the main directions of administrative reform, including devolution and

decentralization of public services. In this respect, the transfer of powers from central to local authorities was followed by the amounts necessary to fulfill those tasks.

A comparison of the local authorities' progress in Romania during 1991-2008 (see Figure 2) shows that the decentralization process in our country was quite extensive on technical aspect, it is not even now fully completed, which will determine the likely in the future a consistent level of transfers from central to local budgets. Supported transfer of powers to local authorities, aimed at agricultural advisory services, assistance to persons with disabilities, special education, religion, housing heating subsidies, national defense, hospitals, etc., has entailed a lot the possibilities to cover the costs of local authorities. For some of these actions, local authorities have benefited from the central authorities of some money as special purpose income, direct effects on local financial autonomy.

Figure 2: Transfer of responsibilities from central to local levels in Romania between 1991 - 2008

				National defence
			the "Bretzel and milk"	the "Bretzel and milk"
			Home heating subsidies	Home heating subsidies
			Religion	Religion
			Special education / minimum income	Special education / minimum income
		Assistance to persons with disabilities	Assistance to persons with disabilities	Assistance to persons with disabilities
		Agricultural consulting	Agricultural consulting	Agricultural consulting
		Veterinary activities	Veterinary activities	Veterinary activities
		Airports	Airports	Airports
		Child protection	Child protection	Child protection
		Water supply and roads	Water supply and roads	Water supply and roads
		Special Funds	Special Funds	Special Funds
	Culture	Culture	Culture	Culture
	Education	Education	Education	Education
	Health	Health	Health	Health
Other economic actions	Other economic actions	Other economic actions	Other economic actions	Other economic actions
Other actions	Other actions	Other actions	Other actions	Other actions
Transport	Transport	Transport	Transport	Transport
Housing and planning	Housing and planning	Housing and planning	Housing and planning	Housing and planning
Social assistance	Social assistance	Social assistance	Social assistance	Social assistance
Public authorities	Public authorities	Public authorities	Public authorities	Public authorities
1991-1992	1995-1996	1999-2000	2003-2004	2007-2008

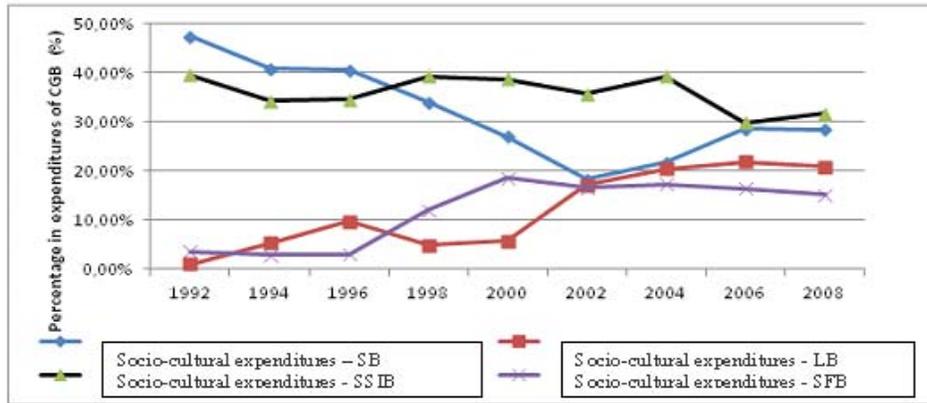
Source: develop by authors after Oprea and Lazăr (2008)

From another perspective, the consolidation of local budgets can be analyzed in terms of financed expenditures structure (boundaries). A first category of expenses is represented, so, by the socio-cultural spending (spending four subgroups: education, health, insurance and social assistance, that culture, leisure and religion). It appears that during the period analyzed, the state budget has declined predominant weight in the first year of analysis and thus the center of gravity of the social and cultural funding from the state budget went to the other budget components, including the local budget had a sustained upward trend.

In terms of strengthening local budgets is interesting that since 2002, the evolution of expenditures of the kind in question, funded from the state budget has taken a turn upward, contrary to that recorded in the period 1992-2002. The main factors explain this development are represented by the accentuate decentralization process (decentralization of educational, health and culture institutions), changes made by the number of beneficiaries (pensioners, unemployed, students, etc.), the depreciation of national currency, GDP evolution etc..

In the case of financing education, major budgetary components involved were the State budget and local budgets.

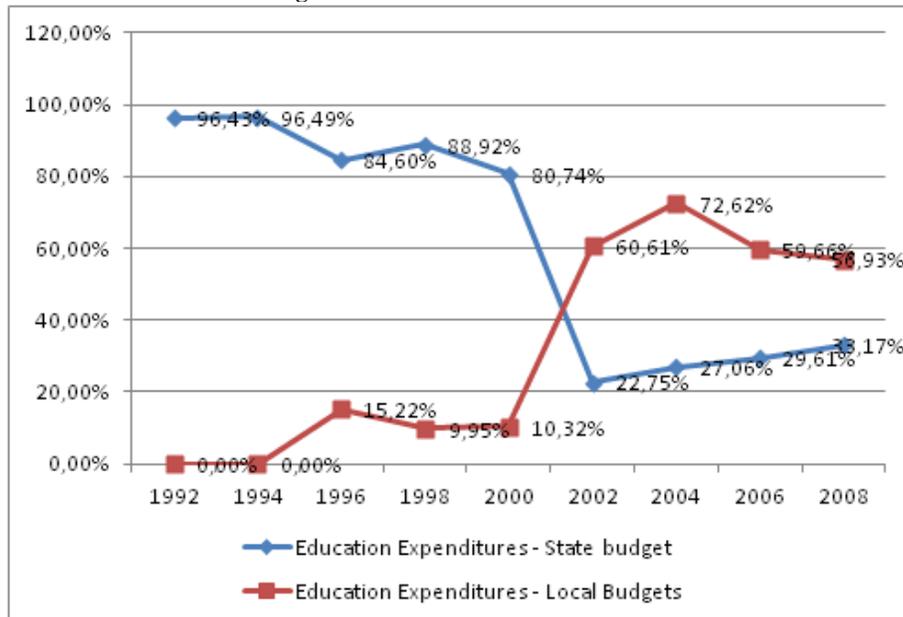
Figure 3: Socio-cultural expenditures evolution financed from public budgets in Romania between 1992-2008



Source: developed by authors using data from Statistical Yearbook of Romania on www.insse.ro, Bulletins of Ministry of Finance and IMF Reports

For the period 1992-2008, we have noticed the change in position of the state budget and local budgets in education funding, substantial change can be observed that the center of gravity to local budgets since 2000 because of financial decentralization in the field. Such a trend is considered positive in accord with the requirements of modern administrative systems organization (in terms of decentralization, subsidiarity, etc.), but a careful analysis of the specific situation in Romania can highlight shortcomings with negative impact on reform objectives. Thus, one of the "golden rules" of financial decentralization is that in this process, the power of financing capital expenditures to be accompanied for the current expenses. In our case, the transfer current funding decisions at the local level, unaccompanied by transferring power to decide on capital expenditure caused, among other factors, a precarious situation in schools, many of them reaching again the situation of not achieving early authorization of the school year. On the other hand, payment of teaching staff in local school based special on revenue with a specific destination from the central budget has been set up as a factor of deresponsabilisation of local financial authorities without rationality of staff costs funded. In larger scale, these events were combined with the trend of increasing budget staff assessed as unjustified and without adequate correlation with economic growth and productivity.

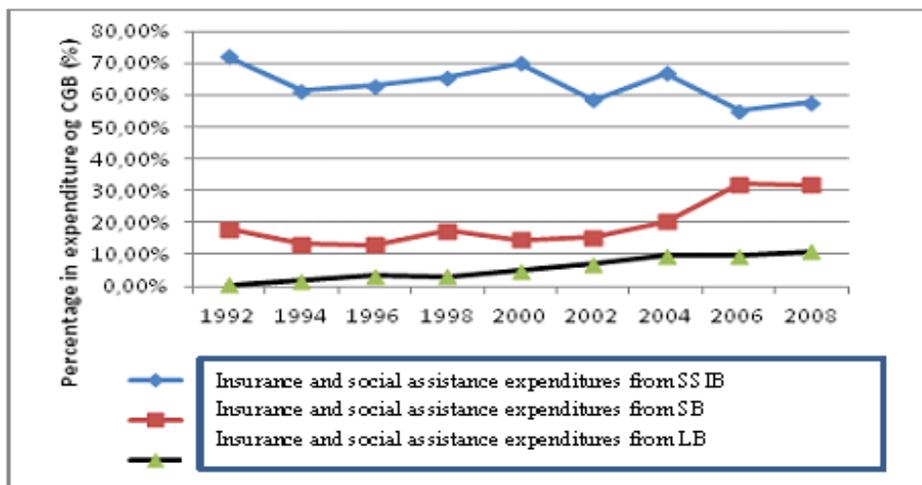
Figure 4: Evolution of expenditures for education financed from public budgets in Romania between 1992-2008



Source: developed by authors using data from Statistical Yearbook of Romania on www.insse.ro, Bulletins of Ministry of Finance and IMF Reports

In the subgroup of insurance and social assistance expenditures, for the period under review (1992-2008) unfavorable economic and social situation, specific transitional periods beginning on decentralized economies, he imprint on insurance and social assistance expenditures. For the most part, they are funded from state social insurance budget (SSIB), but to a lesser extent they are finanțe and local budgets.

Figure 5: Evolution of insurance and social assistance expenditures financed from public budgets in Romania between 1992-2008



Source: developed by authors using data from Statistical Yearbook of Romania on www.inse.ro, Bulletins of Ministry of Finance and IMF Reports

We can notice that the local budgets have increased specific gravity in the system with 10%.

In Romania, until 1997 funding health care was based on a national health system, the amounts being allocated from state budget, local budgets and some funds set up for (Special Fund for Health, functioning between 1992 and 2000, which has been included in the state budget since 2001 and The Health Insurance Fund, operational since 1998 and transformed in 2003 into a single Fund for Social Health Insurance). Social health insurance system established by law in 1997 became operational in 1999. Health financing was based in Romania until the year 1998 on the state budget and local budgets, specific to a national health system. In the case of local budgets, relieving activities involving health financing is evident, the share of these costs before setting up the House of Health Insurance, by 20.32% in 1996 reducing consistently to below 1% in the years following. Towards the end, this value has not exceeded one percent, but a substantial recovery is expected given that in 2010 they proceeded to decentralize hospital.

Social and cultural public expenditures as a part of the subgroup "Expenditures for culture, leisure and religion", confirms that our country fall into the general trend of modern states, to allocate these actions limited amount from public budgets, and to be more on account of local budgets, according to modern administrative and budgetary practices. In this respect, it is recognized that the allocation of competence in the field of culture, recreation and religion should be made a priority by local authorities, as being social interests who customize pretty much local communities.

In the case of local budgets revenues, recognition of local autonomy and the establishment of public disposal competences on principle of decentralization must be accompanied by appropriate income sources, the first steps are consistent in this respect was made during the year 1994, by adopting different taxes and local taxes. Along with the own revenues, local budgets received allowances or amounts deducted from certain state income taxes, up to cover local expenses. Although the need to ensure sufficiency of financial resources of local budgets was constantly invoked as a way of administrative and financial reform, the transfer of powers to local authorities has always been a lack of synchronization with the transfer (disposal) sources of income, as the local authorities (budgets) maintained financial dependence to central authorities (budgets) to a relatively high level for several years in a row.

Revenues of local budgets are hardly noticeable after 1994, with distinct regulation of local taxes, a trend of higher growth is recorded after 1998, following the adoption of new laws on local public finances, which made revenues of local budgets to approach to the state social insurance budget (SSIB). An

obvious change of the gravity center was in 2004, following changes to the local public finance legislation (Ordinance no 45/2003) respectively in 2006 (Law no 273/2006). Through these regulations, balancing amounts deducted from the income tax rates were treated as revenues of local budgets, as was natural.

In terms of strengthening local budgets, basic condition and direct effect of administrative decentralization of powers was the natural and indispensable was the disposal of income source by central authorities (sources previously reflected in the state budget), to the public budget components managed by decentralized authorities. From this perspective, is suggestive for the period under review (1992-2008) evolution of transfers from state budget to local budgets.

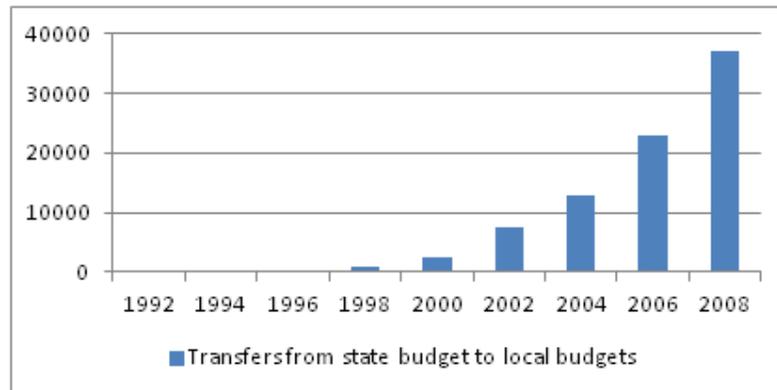
Table 3: The size and share allowances and amounts deducted to the local level from some of the state budget revenues in Romania between 1992-2008

Year	1992	1994	1996	1998	2000	2002	2004	2006	2008
Amounts and share deducted from income tax	0.00	66.81	197.26	499,80	1.743,50	907,00	6633.70	7550.30	14242.00
Amounts broken down from value added tax	0.00	0.00	0.00	0.00	0.00	3185.10	5274.00	14539.00	18634.30
Subsidies	16.80	76.25	184.85	505.45	285.20	117.40	920.20	923.40	4221.50
Total	16.80	143.06	382.11	1005.25	2381.00	7642.20	12827.90	23012.70	37097.80
% transfers in total revenues of LB	84.13%	80.95%	76.44%	74.72%	71.19%	81.97%	80.40%	83.05%	85.03%

Source: developed by authors using data from Statistical Yearbook of Romania on www.insse.ro

According to data, amounts and allowances deducted from certain state income taxes to the local level in the period 1992-2008 saw an overall upward trend, especially for amounts deducted from VAT. It is important to note first that most of this revenue is unconditional transfers for balance and should be treated as their income. However, it is necessary to grasp that these transfers are in some cases (VAT and income tax) over 80% of state budget revenues, the amount available to local budgets being quite small.

Figure 6: Evolution of the levies and transfers from the state budget to local budgets in Romania between 1992-2008



Source: developed by authors using data from Statistical Yearbook of Romania on www.insse.ro

Figure presented shows that levies and transfers in various forms from the state budget to local budgets experienced strong nominal growth, which highlights the financial dimensions of administrative decentralization. As mentioned previously, the Government Ordinance no. 45/2003, deducted from income tax rates were included in the category of own revenues of local budgets, which makes necessary some clarification regarding the financial dependence of the local authorities (budget) to central authorities (budget). Although in practice sometimes appreciate that these revenues (transferred from the state) are not "own" in the true sense of local budgets, we believe that their establishment (largely based on percentages, proportions and predetermined criteria) warrants such an approach. This is important in that to characterize the degree of autonomy / financial dependence of local authorities from central authorities is relevant also to calculate the ratio between own revenues and total revenues of local budgets and the ratio of their own revenues and total expenditures of local budgets. In the first case, the percentage obtained reflects local financial autonomy (being the reverse of financial dependence), and in the second case reflects the result of self-financing capacity of local governments. The calculation of

these indicators is possible, as we said, in terms of own revenues of local authorities in two ways: either considering them narrowly, only as the sum of local tax levies indirect and capital income, or taking into account their definition legal, wider, which includes the revenues of local budgets and allowances deducted from income tax. Although often used in practice first variant of calculation, arguing that discussed revenues are effectively in decision-making powers to local authorities, the result is more accurate, we believe that the latter calculation is equally entitled. Our argument stems from the fact that the legal situation of the two main categories of local financial resources involved (current income and deducted from the income tax rates) is largely similar, both being based on the proportions (rates) and depending on pre-law local economic situation, the only difference being that if the tax levy rates, local authorities have some leeway. In this light, we use calculations revenues of local budgets according to their legal definition.

Table 4: The ratio of own revenues and income/total expenditure of local government in Romania during 1992-2008

Indicator/Year	1992	1994	1996	1998	2000	2002	2004	2006	2008
Total Revenues	19.97	176.72	499.85	1345.42	3344.50	9322.80	15955.80	27706.60	43629.10
Total Expenditures	19.94	173.51	495.52	1338.15	3321.70	9258.80	15540.70	25392.80	42210.20
Own Revenues	3.16	33.50	113.04	332.82	861.20	1620.70	9709.70	12152.10	20587.70
The degree of financial autonomy (%)	15.82	18.96	22.61	24.74	25.75	17.38	60.85	43.86	47.19
Degree of autofinancing (%)	15.85	19.31	22.81	24.87	25.93	17.50	62.48	47.86	48.77

Source: developed by authors using data from Statistical Yearbook of Romania on www.insse.ro

The data table shows that during 1992-2002, financial dependence of local authorities to central authorities was high, the degree of financial autonomy not exceeding 25.75% (the lowest value recorded being 15.82% in 1992), and the degree of autofinancing was quite low, ranging from 15.85% in 1992 and 25.93% in 2000. With the reconsideration of own revenues category, the degree of financial autonomy increased in 2004 to 60.85% and the degree of autofinancing to 62.48%. Should be noted also the "sensitivities" of developments in these indicators, represented by increases in the years 1996 and 2000 following the adoption of regulation on local finances (in 1994, Law no. 27/1994 on taxes local, and in 1998, Law no. 189/1998 on local public finances), which not confirmed by the results recorded values that legislative changes were expected.

These developments are explained by the need of financial support of the state for administrative decentralization, the transfer of powers previously exercised by the central authorities for some local authorities being necessarily accompanied by the transfer of resources, and the important issue is not the level and evolution amounts (rates or amounts deducted, transfers, subsidies, etc..) itself, but how the determination of their background is made. Consider that the substantiation of the amounts transferred is essential in view of rationality manifested interrelations between public budget components, producing the substance implications of its overall functionality.

4. Conclusions

To summarize, we consider that Romanian budget system restructuring operated since 1990 have improved his condition, especially in consolidation local budget position in the budget system, but are still required specific measures, primarily designed to strengthen fiscal discipline and budgetary aggregate. This approach should be combined with a simplification of the interrelations between budget components and local government budgets discharge excessive tasks undertaken, allowing long-term sustainability of these budgets. In our opinion, the approach oriented on increasing revenues permanently, including tax levy increase should only be complementary, if necessary, to measure public expenditure incurred substantial reconsideration of local budgets. From this perspective, we believe, for example, that education should not continually increase costs, but it must be undergone to a process proper of a financial management of education, requiring cost control and accountability of decision makers. We are making this statement, whereas in practice the emphasis is often on increasing education funding and not allocate their efficiency (the educational process itself). This approach departs from the understanding that education expenditures as (real) investment in human capital, which would require their treatment on the basis of modern financial management rules.

5. Acknowledgment

This work was supported by the project "Post-Doctoral Studies in Economics: training program for elite researchers - SPODE" co-funded from the European Social Fund through the Development of Human Resources Operational Programme 2007-2013, contract no. POSDRU/89/1.5/S/61755.

6. References

- Franzke, J. (2010), *Best Practice of Participatory Budgeting in Germany – Chances and Limits* Paper prepared for the *EGPA Annual Conference*, Study Group IV: Local Governance and Democracy, Toulouse (France), 8-10 September 2010.
- Oprea, F. (2011), *Sisteme bugetare publice. Teorie și practică*, Bucharest: Economica Publisher
- Oprea, F., Lazăr, S. (2008), *Local Financial Autonomy In Romania: Challenges And Options For Reform* – CD of the *VI International Scientific Conference*, Brno University, Faculty of Business and Management, Brno.
- Schwarting, G. (2006), *Der kommunale Haushalt*, Berlin: Auflage.
- Schick, A. (2005), Sustainable Budget Policy: Concepts and Approaches, *OECD Journal On Budgeting* – Volume 5 – No. 1 – ISSN 1608-7143, pp. 106- 126.
- ORDINANCE no. 63/2010 amending and supplementing Law no. 273/2006 on local public finances and financial measures to establish.

MARKET INFORMATIONAL EFFICIENCY TESTS AND ITS CRITICS: THE CASE OF EMERGENT CAPITAL MARKETS

OPREAN Camelia

Ph. D. Associate professor, Faculty of Economics / Department of Finance – Accounting, Lucian Blaga University of Sibiu, Sibiu, Romania, camelia.oprean@ulbsibiu.ro

BRĂȚIAN Vasile

Ph. D. Assistant professor, Faculty of Economics / Department of Finance – Accounting, Lucian Blaga University of Sibiu, Sibiu, Romania, bratianvasile@yahoo.com

Abstract: *Efficient Market Hypothesis (EMH) has attracted a considerable number of studies in empirical finance, particularly in determining the market efficiency of an emerging financial market. Conflicting and inconclusive outcomes have been generated by various existing studies in EMH. In addition, efficiency tests in the emerging financial markets are rarely definitive in reaching a conclusion about the issue. The paper proposes a critical analysis regarding the testing methods of the informational efficiency theory of the capital market and also proposes new perspectives that are meant to relax the strong EMH assumptions in emerging markets.*

Key words: efficient market hypothesis, information, tests, emergent

JEL classification: G 14, D 8, G 00

1. Introduction: market efficiency, in light of the classical EMH theories

Considerations concerning the efficiency of financial markets lay under two theories: random walk and the theory of efficient markets. The first theory, random walk, is the theory of random movement of the financial assets. Elaborated during the 6th decade of the 20th century, it supports the idea that the future movement of an asset is independent from past movements of assets on a market. In an informational efficient market, price movements are unpredictable, because they encompass the information and expectations of all market participants.

The second theory, which refers to the hypothesis of efficient markets, was established in the early 60s and assumes that asset markets process with great sensitivity the economic intelligence which they receive and react quickly to adjust the course of financial assets. The theory of efficient markets justifies the need of balanced markets. Roberts (1967) and Fama (1970) have operationalized this hypothesis. In his famous study, which will definitively mark the theory of efficient markets, *Efficient Capital Markets: A Review of Theory and Empirical Work*, written by Fama in 1970, he gives the following definition: “A market in which prices always reflect the available information is called an efficient market”. In this paper, he realizes a synthesis of previous research concerning the predictability of capital markets, the notions of *fair game* and *random walk* becoming well formulated. The distinction between the three forms of efficiency is being made: efficiency in its strong form, semi-strong efficiency and weak efficiency:

- The weak efficiency form sustains the hypothesis that the current price of stocks fully reflects all the informations concerning the stock market, such as: past prices, exchange rates, volumes of transactions and any other information concerning the markets. In an efficient market, past prices of the titles cannot be used to beat the market or to obtain adjusted rentabilities for a superior risk. In such a context, the chartist or technical analysis is useless.
- Semi-strong efficiency look, in addition, to the immediate integration within the new course of any new information with a public character, concerning the firms wealth, its results, dividends, the distribution of free stocks, stock market introduction, etc. In an efficient market, in its semi-hard form, fundamental analysis, founded on public information, is useless.
- Strong efficiency implies, more than that, the quick integration within the market prices, of all available information about the traded asset, including privileged information. Such efficiency (as the semi-hard one) puts into discussion the validity of the entire fundamental value analysis, as the intrinsic value is the market price itself.

This paper is structured as follows: section 2 provides a literature review of the market efficiency hypothesis and random walk. Section 3 discusses the most common methods, such as the statistical tests,

used in testing the classes of informational efficiency. Section 4 presents some previous applied tests on emerging capital markets informational efficiency. In section 5 we evaluate in a critical way these tests and we propose some issues in order to improve the relevance of these testing methods for the emerging capital markets. A conclusion is given in Section 6.

2. Market efficiency hypothesis and random walk: some theoretical aspects

The **market efficiency hypothesis (EMH)** is a statement about:

- the theory that stock prices reflect the true value of stocks;
- the absence of arbitrage opportunities in an economy populated by rational, profit-maximizing agents;
- the hypothesis that market prices always fully reflect available information (Fama 1970).

In Jensen (1978), an efficient market is defined with respect to an information set Φ_t if it is impossible to earn economic profits by trading on the basis of Φ_t . Fama (1970) presented a general notation describing how investors generate price expectations for stocks. This could be explained as:

$$E(p_{j,t+1} | \Phi_t) = [1 + E(r_{j,t+1} | \Phi_t)]p_{jt}$$

where E is the expected value operator, $p_{j,t+1}$ is the price of security j at time $t+1$, $r_{j,t+1}$ is the return on security j during period $t+1$, and Φ_t is the set of information available to investors at time t .

Under the efficient market hypothesis (EMH), investors cannot earn abnormal profits on the available information set Φ_t other than by chance (Islam, Clark, 2005). The level of over value or under value of a particular stock is defined as:

$$x_{j,t+1} = p_{j,t+1} - E(p_{j,t+1} | \Phi_t)$$

where $x_{j,t+1}$ indicates the extent to which the actual price for security j at the end of the period differs from the price expected by investors based on the information available Φ_t . As a result, in an efficient market it must be true that:

$$E(x_{j,t+1} | \Phi_t) = 0$$

This implies that the information is always impounded in stock prices. Therefore the rational expectations of the returns for a particular stock according to the EMH may be represented as:

$$P_{t+1} = E_t P_{t+1} + \varepsilon_{t+1}$$

where P_t is the stock price; and ε_{t+1} is the forecast error. $P_{t+1} - E_t P_{t+1}$ should therefore be zero on average and should be uncorrelated with any information Φ_t . Also $E(x_{j,t+1} | \Phi_t) = 0$ when the random variable (good or bad news), the expected value of the forecast error, is zero:

$$E_t \varepsilon_{t+1} = E_t (P_{t+1} - E_t P_{t+1}) = E_t P_{t+1} - E_t P_{t+1} = 0$$

The **Random Walk Model (RWM)** is the model which assumes that subsequent price changes are sovereign and homogeneously distributed random variables and concludes that changes in assets prices cannot be forecasted through historical price changes and movements. The Random Walk Model is generally used to test the weak-form Efficient Market Hypothesis (Hamid K. et al, 2010).

Random walk theory claims that stock market can be analyzed as random walk according to the next three facts (Vulic, 2010):

- efficient markets respond very fast to new information;
- if the share price is a reflection of all available information, it is impossible to use that information for market predictions;
- it is impossible to predict market movement other than randomly.

The empirical evidences show that the random walk hypothesis is “almost approximately true”. More precisely, if the financial assets returns are partial predictable, both on the short time, and on the medium and long time, the degree of predictability is generally low comparative with the high volatility of these returns.

A random walk is a usual example of a non-stationary series:

$$y_t = y_{t-1} + \varepsilon_t$$

where ε_t is a casual perturbation with stationary character. The series y_t present an upward variance in time, while its 1st difference is stationary because:

$$P_t - P_{t-1} = (1 - L)y_t = \varepsilon_t$$

Regarding the independence property, Fama states the fact that random walk represents an ideal model, it is not a fair copy of the reality, because it is improbable to find perfect independent prices in the market. Even so, it can be accepted as a good model of reality.

3. Tests of informational efficiency of capital markets

Fama (1965) was in the view that the statement about the informational efficiency is general and needs to be tested; moreover, it demands to build up mathematical models and formulations for market equilibrium which will be used for testing the market efficiency.

Despite its simplicity, the EMH is surprisingly difficult to test and considerable care has to be exercised in empirical tests. Forecasting experiments have to specify at least five factors (Timmermann, Granger, 2004), namely:

- the set of forecasting models available at any given point in time, including estimation methods;
- the search technology used to select the best (or a combination of best) forecasting model(s);
- the available 'real time' information set, including public versus private information and ideally the cost of acquiring such information;
- an economic model for the risk premium reflecting economic agents' trade-off between current and future payoffs;
- the size of transaction costs and the available trading technologies and any restrictions on holdings of the asset in question.

Broadly speaking, the incident of white noise, random walk, martingale and fair game properties of financial time series is evidence in favour of EMH. To reiterate, the absence of arbitrage opportunities expresses the idea that the only chance for speculators to gain an opportunity to earn abnormal profits occurs if mispriced stocks exist in an economy populated by rational agents. In fact, the mispriced stocks will be automatically adjusted (Islam et al, 2007).

Fama (1991) reviewed his 1970 work and classified empirical tests of market efficiency in the following categories: tests for return predictability; event studies; tests for private information, which follow the three forms of informational efficiency. Megginson (1997) completed Fama's classification with tests for rational fundamental valuation (Dragotă, Căruntu, Stoian, 2005).

Tests of the weak form of the EMH

The main approach to the empirical evaluation of EMH consists in the identification of market prices behaviour as random-walk processes. The random walk model states that the prices in the financial markets evolve accordingly to a random-walk (with or without drift). Therefore, identifying trends or patterns of price changes in a market couldn't be used to predict the future value of assets (Saramat, Dima, 2011).

1. Statistical Tests for Independence

Given the assumption that the weak-form EMH states that the rates of return on the market are independent, the tests used to examine the weak form of the EMH test for the independence assumption. The tests should imply that an investor couldn't anticipate with gains the future prices, using historical prices (Todea).

The weak form of EMH states that two conditions have to be accomplished in the same time:

- a. the autocorrelation coefficients of variable $R_{j,t}$ must be close to zero (serial uncorrelation);
- b. the process $R_{j,t}$ has to be integrated by 0 order (stationarity condition: series is said to be (weakly or covariance) *stationary* if the mean and autocovariances of the series do not depend on time).

The weak form argues that there should be no correlation of price movements over time. This can be tested statistically. One form of statistical test would look for **auto (or serial) correlation**. Autocorrelation describes the situation where the stock price movement for one period of time is related to the price movements in a previous period. The serial autocorrelation is used to test the relationship between the time series its own values at different lags. If the serial autocorrelation is negative it means it is mean reverting and accepts the null hypothesis and if the result is positive coefficients then it rejects the null hypothesis.

In statistics, the autocorrelation (Box and Jenkins, 1976) of a random process describes the correlation between values of the process at different points in time, as a function of the two times or of the time difference. Autocorrelation is a correlation coefficient. However, instead of correlation between

two different variables, the correlation is between two values of the same variable at times X_t and X_{t+k} . This is the correlation coefficient for values of the series periods apart.

Tests have found that usually there is not significant level of autocorrelation, except in the case of some portfolios of small shares. Even this may be due to measurement problems when collating stock price information. It is difficult to rely on prices for small stocks since they are often infrequently traded (the problem of non-synchronous trading).

Alternatively, a **run test** can look at the changes in price through time and compare the actual changes to what would be expected for a random series. Run test of randomness is an alternative test to test autocorrelation in the data. To confirm whether or not the data has correlation with the lagged value, run test of randomness is applied.

The run test is a non-parametric test whereby the number of sequences of consecutive positive and negative returns is tabulated and compared against its sampling distribution under the random walk hypothesis. In the stock market, run test of randomness is applied to know if the stock price of a particular company is behaving randomly, or if there is any pattern. Run test of randomness is basically based on the run. Run is basically a sequence of one symbol such as + or -. A run is defined as the repeated occurrence of the same value or category of a variable. It is indexed by two parameters, which are the type of the run and the length. Stock price runs can be positive, negative, or have no change. The length is how often a run type occurs in succession. Run test of randomness assumes that the mean and variance are constant and the probability is independent.

Another technique that will be used for testing the autocorrelation is Ljung-Box (1979), for autocorrelations with lag more or equal to 1 (Todea, 2002), or Lagrange Multiplier test (LM) (Lazăr, Ureche, 2007). The **Ljung-Box test** is a type of statistical test of whether any of a group of autocorrelations of a time series are different from zero. Instead of testing randomness at each distinct lag, it tests the "overall" randomness based on a number of lags, and is therefore a portmanteau test. This test is sometimes known as the **Ljung-Box Q test**, and it is closely connected to the **Box-Pierce test**. The Box-Pierce test statistic is a simplified version of the Ljung-Box statistic for which subsequent simulation studies have shown poor performance. Ljung-Box test provides a superior fit to the chi-square distribution for little samples.

In mathematical optimization, the method of **Lagrange multipliers** (named after Joseph Louis Lagrange) provides a strategy for finding the local maxima and minima of a function subject to equality constraints.

The formal method to test the stationarity of a series is the **unit root test**. **Augmented Dickey-Fuller (ADF)** test is applied to test the presence of unit root in the time series of stock price changes in the indices. Majorly it is used to test the stationarity of the time series. ADF test implies that the series of natural logarithms of stock indexes to follow the stochastic process, type AR(1). In other words, ADF Test Statistic represents the t test for accepting or rejecting the null hypothesis of the Dickey-Fuller test. It is an augmented version of the Dickey-Fuller test for a larger and more complicated set of time series models. The augmented Dickey-Fuller (ADF) statistic, used in the test, is a negative number. The more negative it is, the stronger the rejection of the hypothesis that there is a unit root at some level of confidence.

Phillips and Perron have developed a more comprehensive theory of unit root nonstationarity. The tests are similar to ADF tests, but they incorporate an automatic correction to the DF procedure to allow for autocorrelated residuals. **Phillips-Perron test** is a test that does not include in the tested equation differences between the past series and is using the method of least squares in a simple form. The test itself is a t-statistic for regression coefficient, but adjusted to remove errors. The tests usually give the same conclusions as the ADF tests, and the calculation of the test statistics is complex.

For testing a series (or the first or second difference of the series) for the presence of a unit root, in addition to Augmented Dickey-Fuller (1979) and Phillips-Perron (1988) tests, one can compute the GLS-detrended Dickey-Fuller (Elliot, Rothenberg, and Stock, 1996), Kwiatkowski, Phillips, Schmidt, and Shin (KPSS, 1992), Elliott, Rothenberg, and Stock Point Optimal (ERS, 1996), and Ng and Perron (NP, 2001) unit root tests.

An extra test, in order to confirm that the applied regression is viable, consists in the study of error variance that has to be normal distributed, 0 mean and constant variance. To study the normality, one can use the following indicators: Kurtosis, Skewness and Jarque-Bera.

A significant assumption of the random walk theory is investigated through **variance ratio test**. One popular approach, the Lo and MacKinlay (1988, 1989) overlapping variance ratio test, examines the

predictability of time series data by comparing variances of differences of the data (returns) calculated over different intervals. If we assume the data follow a random walk, the variance of a period difference should be times the variance of the one-period difference. Evaluating the empirical evidence for or against this restriction is the basis of the variance ratio test.

2. Trading Tests

Another point we discussed regarding the weak-form EMH is that past returns are not indicative of future results, therefore, the rules that traders follow are invalid. An example of a trading test would be the filter rule, which shows that after transaction costs, an investor cannot earn an abnormal return. These tests study the weak form of informational efficiency in an indirect way, evaluating the possibility to gain extra profits by using the historical evolution of the asset through a trade strategy.

Tests of the semi-strong form of the EMH

These tests study the possibility to gain extra profits by trading the assets using the public available information (Dragotă et al, 2003). Given that the semi-strong form implies that the market is reflective of all publicly available information, the tests of the semi-strong form of the EMH are as follows:

1. Event Tests

The semi-strong form assumes that the market is reflective of all publicly available information. An event test analyzes the security both before and after an event, such as earnings. The idea behind the event test is that an investor will not be able to reap an above average return by trading on an event.

2. Regression/Time Series Tests

A time series forecasts returns based historical data. As a result, an investor should not be able to achieve an abnormal return using this method. If past information about public macroeconomic data can affect current stock prices, the stockmarket is inefficient because such a piece of information is not embodied in the prices. This is dubbed semi-strong informational inefficiency. Since macro data can be considered more important for emerging markets than for their developed counterparts, semi-strong efficiency matters more for the emerging markets (Guttler, Meurer, Da Silva, 2007).

Tests of the strong form of the EMH

Given that the strong-form implies that the market is reflective of all information, both public and private, the tests for the strong-form center around groups of investors with excess information. These investors are as follows:

- **Insiders:** Insiders to a company, such as senior managers, have access to inside information. Regulations forbid insiders for using this information to achieve abnormal returns.
- **Exchange Specialists:** An exchange specialist recalls runs on the orders for a specific equity. It has been found however, that exchange specialists can achieve above average returns with this specific order information.
- **Analysts:** The equity analyst has been an interesting test. It analyzes whether an analyst's opinion can help an investor achieve above average returns. Analysts do typically cause movements in the equities they focus on.
- **Institutional money managers:** Institutional money managers, working for mutual funds, pensions and other types of institutional accounts, have been found to have typically not perform above the overall market benchmark on a consistent basis.

This type of efficiency states that even the inside information, accesible to the categories presented above, cannot generate abnormal profits for their owners.

4. Previous tests of informational efficiency applied on emerging capital markets

Emerging equity markets are widely thought to be places of substantial trading profits and weak and semi-strong form market inefficiencies when compared to developed markets. In their article, Griffin, Kelly and Nardari, 2009, examine the extent to which this is true using a variety of methodologies and data from 28 developed and 28 emerging markets. Emerging markets exhibit similar autocorrelation in firm returns, suggesting that they are not under or overreacting to news contained in past returns any more than in developed markets. Emerging markets incorporate past market and portfolio returns into prices slightly better than developed markets.

Using the article of Basu and Morey (2005), who developed a theoretical model that explores the effect of trade openness on stock return autocorrelation patterns, the paper of Lim and Kim, 2008, brings their proposition to the data, examining the impact of liberalization policies, both trade and financial, on the informational efficiency of 23 emerging stock markets. In general, the key results from fixed effects panel regressions support their prediction that trade liberalization, rather than financial openness, matters the most for informational efficiency.

Employing both cointegration analysis and a variety of Granger causality tests, Guttler, Meurer, Da Silva (2007) examine whether the Brazilian stockmarket is efficient in processing new information about public macroeconomic data (semi-strong efficiency). They found the stockmarket to be inefficient, which is in line with most results for other emerging markets. They found a long run relationship between selected macroeconomic variables of the Brazilian economy and its stockmarket index.

Islam, Watanapalachaikul, Clark (2007) proposed a theory-free paradigm of non-parametric tests of market efficiency for an emerging stock market, the Thai stock market, consisting of two tests which are run-test and autocorrelation function tests (ACF), to establish a more definitive conclusion about EMH in emerging financial markets. The result of this research demonstrates that an autocorrelation on Thai stock market returns exists particularly during the post-crisis period.

Regarding Romanian capital market, it has been investigated rationality of Romanian investors, and efficiency market hypothesis represented a useful tool in order to achieve this goal (Dragotă, Mitrica, 2004). The tests suggested by Fama [1970] have been successfully applied by many authors. Therefore, for many Romanian researchers it was incentive to proceed on investigating informational efficiency of Romanian capital market. Most of these studies have focused on the weak form of informational market efficiency using in that sense autocorrelation coefficients, normality and stationarity tests (Augmented Dickey-Fuller and Phillips-Perron) in order to test random walk pattern for stock returns.

One particular study, relatively recent and different from those existing, is that of Voineagu and Pele (2008), in which the efficiency of the capital market in Romania is tested using an econometric model based on the random walk theory, proving the weak form efficiency of this market.

Another recent paper (Bratian, Opreana, 2011) tested the hypothesis of efficient market in the case of capital market in Romania during the economic financial crisis. Following statistical tests applied to stock indexes BET, BET-C and BET-FI to detect random-walk type behavior, led to the rejection of hypothesis behavior of these daily series of stock indices. They have not obtained sufficient evidence to support the efficient market hypothesis in weak form, for the daily stock indices.

Lazăr and Ureche (2007) tested weak-form market efficiency of eight emerging markets: Romania, Hungary, Czech Republic, Lithuania, Poland, Slovakia, Slovenia, Turkey. The used tests determined empirically the presence of linear and nonlinear dependences, for most of the returns series. Most of these emerging equity markets were not weak-form efficient.

In their paper, Omay and Karadagli (2010) addressed weak form stock market efficiency of emerging economies, by testing whether the price series of these markets contain unit root. The results of ADF and PP indicated that Bulgarian, Greek, Hungarian, Polish, Romanian, Russian, Slovenian and Turkish stock markets were weak form efficient, while the results of nonlinear unit root test implied that Russian, Romanian and Polish stock markets were not weak form efficient.

The analyze done in their paper (Dima, Barna, Pirtea, 2007) suggests the following aspects: the financial sector of the market reflected by the BET-FI index can be described „up to a point” as being „informational efficient” (in the weak way of the concept), but the assembly of the weak characteristics does not fully respect the demands raised by such a characterization.

In their paper, Dragotă, Caruntu, Stoian (2005) reveal that it is not necessary that a market is informational efficient only if prices follow a random walk. In other words, this is a necessary condition, but not a sufficient one. For example, on Romanian capital markets, some studies reveal a random walk evolution of prices. However, their study proves that there is a significant difference between price and an intrinsic value for some assets, which represents a major feature of Romanian capital markets, because that anomaly is persistent in time. Basically, the results of their study put in question investors' rationality on Romanian capital markets.

5. Critical evaluation of testing methods for the emerging capital markets

From the above review, it can be concluded that empirical tests have given mix results about efficiency in emerging markets. For a test to be reliable it should take into consideration the institutional features of these markets. These empirical studies have used the conventional efficiency tests, which have

been developed for testing mature markets. Emerging markets are characterized by low liquidity, thin trading, unreliable information, and less informed investors. Furthermore, the rationality assumption implies that investors are risk averse, instantaneously respond to new information, and make unbiased forecasts. Based on these assumptions we expect prices to respond linearly to the arrival of information.

The weak-form of informational efficiency is put in doubt by some anomalies, like the *week-end effect* and *january effect*. These anomalies are empirical results that seem to be inconsistent with maintained theories of asset-pricing behavior. They indicate either market inefficiency (profit opportunities) or inadequacies in the underlying asset-pricing model. An anomaly or regularity is where empirical evidence contradicts the EMH. For example, it may be the case that if a share price rises one day, it is more likely to rise the next day and if it falls one day it is more likely to fall the next day. This knowledge would enable us to predict future price movements with some accuracy it would contravene the EMH and as a result would be referred to as an anomaly.

The semi-strong form of informational efficiency is put in doubt by the existence of financial crashes, the so-called *speculative bubbles* (Dragotă et al, 2003).

The major challenges to EMH are mainly in the following forms: empirical tests for EMH show no evidence in favour of EMH, the existence of the limitations of the statistical and mathematical models for EMH, the evidence of the excess volatility mean reversion predictability, the existence of bubbles, and non-linear complex dynamics and chaos in the stock market. To test the hypothesis of informational efficiency of an emergent market, one should take into account some peculiarities of these markets, like: nonlinearity of asset prices, thin trading, the financial liberalization impact on the performance of emerging markets.

The new studies in this field should eliminate two effects from the random walk hypothesis testing:

- The effect of thin trading;
- The effect of nonlinearity.

In testing the efficiency of emerging markets, it is necessary to take into account some of their characteristics, like **thin trading**. Among the consequences of thin trading is the appearance of a serial correlation, studied by Miller, Muthuswamy and Whaley (1994). To remove the impact of this artificial correlation, a correction is applied to the observed returns. The methodology proposed by Miller, Muthuswamy and Whaley suggests an autoregressive model AR(1) to separate the effect of infrequent trading (Lazar, Ureche, 2007).

Many studies showed that low liquidity, as a result of the thin trading of assets can imply a wrong rejection of weak form informational efficiency because the artificial autocorrelations. We mention in this sense a study that tests random walk hypothesis by eliminating the effect of thin trading. Abraham, Seyyed și Alsakran (2002) analyse the main exchange indexes of Saudi Arabia, Kuwait and Bahrain. They say that inferences drawn from tests of market efficiency are rendered imprecise in the presence of infrequent trading. As the observed index in thinly traded markets may not represent the true underlying index value, there is a systematic bias toward rejecting the efficient market hypothesis. For the three emerging Gulf markets examined in their paper, correction for infrequent trading significantly alters the results of market efficiency and random walk tests.

Another study (Alkhazali, 2011), after adjusting for thin trading, examined the market efficiency for six emerging stock markets in the Gulf Cooperation Council (GCC) countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. The findings of the study are: as the observed indexes in thinly traded markets may not represent the true underlying index value, there is a systematic bias toward rejecting the efficient market hypothesis. The results of the study show that after removing the effect of infrequent trading the random walk hypothesis was not rejected in all GCC equity markets.

Conventional tests based on autocorrelation coefficients detect only linear autocorrelation. Emerging markets are typically characterized by a **non-linear information behavior** in stock prices (Todea, 2005).

To detect nonlinear correlations in the returns series, Lazăr, Ureche (2007) performed a BDS test (Brock, Dechert, Scheinkman and LeBaron, 1996); BDS is a powerful tool for detecting serial dependence in time series. The runs test relies only on the successive returns signs, without interest in their dimension and does not require assumptions about the distribution of the returns. A sequence with too many or too few runs suggests that the sample is not random.

In their paper, Hassan, Al-Sultan, Al-Saleem, 2003, examine the market efficiency of a frontier capital market of Kuwait by taking into consideration the role of infrequent trading, non-linearity in

emerging stock market and regulatory changes. Correction has been made to accommodate thin trading and possible non-linearity. The results do not support the null hypothesis of market efficiency for the whole study period and earlier sub periods.

The emergent markets are characterized by quick structural changes and gradually financial liberalization. In these conditions, many researchers built tests that could show the possible increase of efficiency in time. These **tests of efficiency evolution** could be done by using:

- Kalman filters: we mention here the paper of Rockinger, Urga (2000) that introduces a model, based on the Kalman filter framework, which allows for time varying parameters, latent factors, and a general GARCH structure for the residuals. With this extension of the Bekaert and Harvey (1997) model it is possible to test if an emerging stock market becomes more efficient over time and more integrated with other already established markets in situations where no macroeconomic conditioning variables are available.
- The test of the report of variances with autocorrelation coefficients variable in time: the article of Kvedaras and Basdevant (2002) combines the methodology for testing the efficiency of capital market using the variance ratio robust to heteroscedasticity with the state-space representation, which enabled them to use an efficient filtering technique - the Kalman filter - to get time varying autocorrelations.

The impact of financial liberalization upon the emergent markets performance is other element that should be taken into account when testing the weak form of informational efficiency. The classical models that require the constance of parameters in time are incapable to show the level of efficiency evolution. More than that, the returns are far from the normal distribution, because they are not independent and identical distributed. In these conditions, one should use a model that takes into account all these aspects (see Nguyen, Bellalah, 2008).

Most studies on the informational efficiency submit on the idea that the deviation from random walk process is perceived as a deviation from the hypothesis of informational efficiency. This deviation is caused by the presence of long or short run dependencies:

- **long run dependencies** can be tested with Hurst exponent. The presence of long memory dependence in asset returns has been subject of a long and extensive research. In a recent paper, Cajueiro and Tabak (2005) have shown that long-range dependence for equity returns is time-varying and therefore the dynamics of these Hurst exponents should be explored. Furthermore, Cajueiro and Tabak presented a rank for efficiency built by analyzing median Hurst exponents for different countries.
- **short run dependencies** of financial market can be tested with the General Spectral Test (GST) proposed by Escanciano & Velasco (2006). However, stock returns may show non-linear dependence. Based on this, they proposed a generalized spectral (GS) test, which can capture both linear and non-linear dependence.

6. Conclusions

During the last years, there have been published various studies regarding the analysis of the informational efficiency of the Romanian capital market, too. So, methodologically, based on the completed analysis are autocorrelation tests, stationary tests or tests analyzing the data series probability distributions based on which it has been tried to validate the hypothesis of weak form informational efficiency of the capital market in Romania. Despite these facts, the results of the tests do not lead to a pertinent and definitive conclusion of this matter.

The research of emergent markets efficiency will have new dynamics because, beside the classical analysis instruments, new research models will be applied, based on the technical progress and on the high speed of incorporating the information. As a conclusion, all the efficiency tests, the scientific identification of markets inefficiencies help the improvement of our knowledge regarding the assets behaviour and the returns evolution in time. They help to improve the assets evaluation models, but also the practices and the vision of professionals in the capital markets.

7. Acknowledgements

This work was supported by the project "Post-Doctoral Studies in Economics: training program for elite researchers - SPODE" co-funded from the European Social Fund through the Development of Human Resources Operațional Programme 2007-2013, contract no. POSDRU/89/1.5/S/61755

8. References

- Abraham Abraham, Seyyed Fazal J., Alsakran Sulaiman A. (2002) *Testing the Random Walk Behavior and Efficiency of the Gulf Stock Markets*, *Financial Review*, volume 37, issue 3
- Basu, P., Morey, M.R. (2005) *Trade opening and the behavior of emerging stock market prices*, *Journal of Economic Integration* 20, 68-92
- Box, G. E. P., and Jenkins, G. (1976) *Time Series Analysis: Forecasting and Control*, Holden-Day
- Brătian V., Opreana C. (2010) *Testing the hypothesis of a efficient market in terms of information – the case of capital market in Romania during recession*, *Studies in Business and Economics*, vol. 5, issue 3
- Cajueiro Daniel O., Tabak Benjamin M. (2005) *Ranking efficiency for emerging equity markets*, *Chaos, Solitons & Fractals*, Volume 23, Issue 2
- Dima, Bogdan & Barna, Flavia & Pirtea, Marilen (2007) *Romanian Capital Market And The Informational Efficiency*, MPRA Paper 5807, University Library of Munich, Germany
- Dragotă Victor, Căruntu Mihai, Stoian Andreea (2005) *Market informational efficiency and investors' rationality: some evidences on Romanian capital market*, http://iweb.cerge-ei.cz/pdf/gdn/RRCV_19_paper_03.pdf
- Dragotă, V., Dragotă, M., Dămian, O., Mitrică, E. (2003) *Gestiunea portofoliului de valori mobiliare*, Ed. Economică, București
- Dragotă, V., Mitrică, E., (2004) *Emergent capital markets' efficiency: The case of Romania*, *European Journal of Operational Research*, 155, issue 2
- Fama, E., (1970) *Efficient Capital Markets: a Review of Theory and Empirical Work*, *Journal of Finance*, 25 may
- Griffin, John M., Kelly, Patrick J. and Nardari, Federico (2009) *Are Emerging Markets More Profitable? Implications for Comparing Weak and Semi-Strong Form Efficiency*, AFA New Orleans Meetings Paper
- Grossman, S., Stiglitz, J. (1980) *On the Impossibility of Informationally Efficient Markets*, *The American Economic Review*, vol 70, issue3
- Guttler Caio, Meurer, Roberto and Da Silva, Sergio (2007), *Informational inefficiency of the Brazilian stockmarket*, MPRA Paper No. 1980
- Hamid Kashif, Suleman Muhammad Tahir, Shah Syed Zulfiqar Ali, Akash Rana Shahid Imdad (2010) *Testing the Weak form of Efficient Market Hypothesis: Empirical Evidence from Asia-Pacific Markets*, *International Research Journal of Finance and Economics*, ISSN 1450-2887 Issue 58
- Hassan, K. M., Al-Sultan, W., and Al-Saleem, J. A. (2003) *Stock Market Efficiency in the Gulf Cooperation Council Countries (GCC): the Case of Kuwait Stock Exchange*, *Scientific Journal of Administrative Development*, 1(1), 1-21.
- Islam Sardar M.N., Watanapalachaikul Sethapong, Clark Colin (2007) *Are Emerging Financial Markets Efficient? Some Evidence from the Models of the Thai Stock Market*, *Journal of Emerging Market Finance* December vol. 6 no. 3
- Kvedaras Virmantas, Basdevant Olivier (2002) *Testing the efficiency of emerging markets: the case of the baltic states*, *Working Papers of Eesti Pank*, No 9
- Lazar Dorina, Ureche Simina (2007) *Testing Efficiency of the Stock Market in Emerging Economies*, *Analele Universitatii din Oradea-Stiinte Economice*, XVI
- Lim, Kian-Ping and Kim, Jae H. (2008) *Trade Openness and the Weak-Form Efficiency of Emerging Stock Markets*. Available at SSRN: <http://ssrn.com/abstract=1269312>
- Nguyen, D.K. & Bellalah, M. (2008) *Stock market liberalization, structural breaks and dynamic changes in emerging market volatility*, *Review of Accounting and Finance*, vol. 7, issue 4
- Omay, Nazli C. and Karadagli, Ece C. (2010) *Testing Weak Form Market Efficiency for Emerging Economies: A Nonlinear Approach*, <http://mpa.ub.uni-muenchen.de/27312>
- Osamah AlKhazali (2011) *Does infrequent trading make a difference on stock market efficiency? Evidence from the Gulf Cooperation Council (GCC) countries*, *Studies in Economics and Finance*, Vol. 28 Iss: 2

- Pele, D.T. and Voineagu, V. (2008) *Testing Market Efficiency via Decomposition of Stock Return. Application to Romanian Capital Market*, Romanian Journal for Economic Forecasting, 5(3): 63-79.
- Rockinger, Michael & Urga, Giovanni (2000) *A Time Varying Parameter Model to Test for Predictability and Integration in Stock Markets of Transition Economies*, CEPR Discussion Papers 2346
- Stancu, I. (2003) *Finanțe*, Ed. Economică, București
- Șărămăt O., Dima B. (2011) *Testing the weak-form informational efficiency of United Kingdom, United States of America and Japan's capital markets*, Timisoara, Journal of Economics, Volume 4, Issue 2 (14)
- Timmermann Allan, Granger Clive W.J. (2004), *Efficient market hypothesis and forecasting*, International Journal of Forecasting 20
- Todea A. (2002) *Teoria piețelor eficiente și analiza tehnică: Cazul pieței românești*, Studia Universitatis Babeș-Bolyai, Oeconomica, XLVII, 1
- Voineagu, V., Pele.D. (2008) *Testing Market Efficiency via Decomposition of Stock Return. Application Romanian Capital Market*, Romanian Journal of Economic Forecasting, nr. 3
- Vulić Tamara Backović (2010) *Testing the Efficient Market Hypothesis and its Critics - Application on the Montenegrin Stock Exchange*, Available at <http://www.eefs.eu/conf/Athens/Papers/550.pdf>

POST-CRISIS EXCHANGE RATE ARRANGEMENTS IN EUROPE

ORĂȘTEAN Ramona

Ph. D. Associate Professor, Faculty of Economic Sciences, Lucian Blaga University of Sibiu, Sibiu, Romania, torasib@yahoo.com

MĂRGINEAN Silvia

Ph. D. Associate Professor, Faculty of Economic Sciences, Lucian Blaga University of Sibiu, Sibiu, Romania, silvia_marginean@yahoo.com

Abstract: *This paper make a comparative analyze of the exchange rate arrangements in Europe (48 countries) before and after the global financial crisis. The main conclusion is that a number of countries abandoned their previously exchange rate regimes: Albania, Iceland and Switzerland (from free floating to managed floating); Hungary (from pegged exchange rate within fluctuation bands to euro to managed floating); Czech Republic (from managed floating to free floating); Croatia (from managed floating) and Macedonia (from conventional peg to euro) to a stabilized arrangement, with euro as reference currency; Azerbaijan (from crawling peg to a stabilized arrangement, with a composite anchor).*

Key words: exchange rate, arrangements, European countries, crisis

JEL classification: E42, F31, F33

1. Introduction

Exchange rate arrangements vary according to the degree of flexibility in establishing the exchange rate: from more rigid forms – currency board or pegging domestic currency to another currency – to free floating.

The fixed and the flexible exchange rates are two alternatives that in fact are the extremes. There are several hybrid systems between them: controlled or dirty floating, when central banks sometimes intervene in the market; wider band floating, a compromise reached after 1971 when the members of the International Monetary Fund decided to enlarge the floating band to $\pm 2.25\%$ by the Smithsonian Agreement on the realignment of major currencies; temporary exchange rate stability, with changes imposed by market requirements (crawling peg), case in which the fixed rate is adjusted periodically according to the evolution of certain quantitative indicators monitored in a particular country.

After a certain period of considerable volatility of exchange rates, implying substantial US dollar appreciation in comparison to the 80s, a compromise was reached by the Louvre Agreement (1987), which set specific target zones for the major currencies, and marked the transition from flexible to controlled exchange rates. This followed the Plaza Agreement (1985) in which the US agreed on the necessity of intervening in currency markets during periods of instability, this intervention being possible only with the cooperation between monetary authorities (Levi, 2005).

The international monetary system shaped by the Louvre Agreement may be considered a flexible exchange rate system, within targets revised periodically, but in which the interference level is not clearly stated.

Choosing the appropriate exchange rate regime is one of the key policy choices for monetary authorities, with additional implications for the size and composition of foreign reserves and interventions. These arrangements are dynamic due to their permanent diversification and because the values established this way are rapidly changing.

2. Literature review

While the literature in the field of optimum currency area provides the framework for choosing a certain exchange rate regime, a new concept is emerging in the specialized literature, namely that of “**fear of floating**” (Calvo and Reinhart, 2002). Its definition starts from the presupposition that highly volatile exchange rates decrease trade output, increase the interest rate risk premium and reduce welfare. While “de jure” they are floating exchange rates, “de facto” these rates imply high risks, revealed by the financial crises emerging countries have had to face.

“Fear of floating” can be explained starting from the following facts (Christl and Just, 2004):

- The variability of the exchange rate is one of the prominent features of an open economy and the tendency of the nominal exchange rate to move in a volatile and unpredictable way has been blamed for the decrease in trade output and welfare. The wish to moderate this volatility is the motivation for controlled or fixed currency regimes in certain countries. The question that rises is whether a certain currency arrangement has a significant impact upon trade or not. The answer is not very obvious, empirical evidence pointing to both directions. However, there is a unanimous opinion that a stable exchange rate promotes trade, especially that of the monetary union. That is the reason why it is said that the fixed exchange rate helps emerging economies to promote the increase in investments and savings.
- Most developing countries cannot obtain loans in their own currency from abroad, their debt being denominated in a foreign currency. That is why the depreciation of the domestic currency entails huge pressure on the balance of payments.

Based on exchange rates and international reserves data from IMF countries over the period 1974-2000, Levy-Yeyati and Sturzenegger (2005) found that “de facto” pegs have remained stable throughout the last decade. They argued that the increase in the number of “de jure” floats goes hand in hand with an increase in the number of “de facto” dirty floats.

The (official) “de jure” classification is made by the IMF and the “de facto” classification is based upon procedures developed by Reinhart and Rogoff (2002). Several empiric studies have proved that the evaluation of central parities adjustments and interventions on exchange markets could induce currency regimes that differ from official arrangements. First of all, a country can experience low fluctuations of the exchange rate although monetary authorities do not have an official commitment to maintain the parity between specific limits. Secondly, a country can disclose its fear of pegging when trying to maintain a pegged rate, experiences in fact parity changes (Levy-Yeyati and Sturzenegger, 2001).

Exchange rate arrangements of the *free floating* type yield better results in **developed economies**, without creating inflationist pressure. The advantages of flexible exchange rates increase if that country integrates into the global capital market and develops a vigorous financial system (Rogoff et al., 2003). A study of Bordo et al. (2004) shows that in economies such as that of the US, Japan or Western Europe, free floating is appropriate as financial markets are developed and the economic system is flexible.

Eichengreen and Razo-Garcia (2005) find that capital mobility is a prerequisite of exchange rate flexibility, as banks and companies need specific financial instruments to resist the volatility of international prices. However, the liberalization of the capital account is possible only when institutional, legislative and macroeconomic reforms are instituted to support development of financial markets. The way to ensuring exchange rate flexibility must be parallel to that concerning the deregulation and liberalization of capital markets.

Developing economies have a limited capacity of absorbing large exchange rate fluctuations due to poor development of markets for protecting the currency (Reinhart and Rogoff, 2002). These countries, with limited access to external capital markets have two options: either exchange rate arrangements that *limit flexibility* (fixed exchange rates or managed floating), or *free floating accompanied by an inflation targeting monetary strategy* (Fischer, 2001; Obstfeld and Rogoff, 1995). Fixed exchange rates are not feasible in emerging economies because, under such circumstances, regional monetary unions are impossible, and unilateral pegging of domestic currency causes losing control over the monetary policy.

The analysis of the financial crises has led to a bipolar view (Fischer, 2001) that intent not to rule out everything but to pronounce as unsustainable a variety of soft pegging exchange rate arrangements. Past financial crises (Mexico - 1994, South-East Asia - 1997, Russia - 1998, Argentina - 2000) have involved a fixed or pegged exchange rate arrangement. Some of the countries that did not have pegged rates have managed to avoid crisis (South Africa, Israel in 1998, Mexico in 1998, Turkey in 1998).

De Grauwe and Grimaldi (2002) consider that the financial crises of the 1990s have created the perception that one of the fundamental reasons for the occurrence of such crises is to be found in the fact that exchange rates were pegged for too long. Their findings reveal that pegged exchange rates invited speculative attacks in the foreign exchange markets that quite often spilled over to the banking sector.

A study regarding exchange rate regimes in Southeastern Europe (Barisitz, 2008) emphasizes that in crisis situations, exchange rate regimes tend to temporarily loosen, or in some cases, to collapse (Albania – 1997, Bulgaria – 1996-1997, Serbia – 2000 and 2003). After that often tighter regimes tend to be installed.

Another paper (Tsangarides, 2010) examines the role of the exchange rate regime in explaining how emerging market economies fared in the recent global financial crisis, particularly in terms of output

losses and growth resilience, finding that the growth performance for pegs was not different from that of floats during the crisis. For the recovery period 2010-2011, pegs appear to be faring worse, with growth recovering more slowly than floats.

An IMF study (Ghosh et al., 2010) concludes that: pegged regimes provide a useful nominal anchor without compromising growth; intermediate regimes are also associated with low nominal volatility and higher economic growth; floating regimes are associated with smoother external adjustment and lower susceptibility to financial crises.

In contrast, Esaka (2010) points that pegged regimes significantly decrease the likelihood of currency crises compared with floating regimes. By using the combined data of exchange rate regimes and the existence of capital controls, his work describes how pegged regimes with capital account liberalization significantly lower the likelihood of currency crises compared with other regimes.

3. Exchange rate arrangements in European countries before and after the crisis

The process of choosing the exchange rate regime for European countries has been influenced by other criteria than the traditional ones, which belong to macroeconomic criteria.

Many countries (Central and Southeast European countries) have suffered significant economic and political mutations, as the first stage of transition included liberalization of prices and trade, and in the second half of the 90s, remarkable progress was made with respect to disinflation. Economic growth and liberalization of the capital account have attracted foreign investments. Economic development has been accompanied by political and social pressure. Under such circumstances, many countries have had to resist speculative attacks against their domestic currencies (Czech Republic in 1997 and Slovakia in 1998).

Exchange rate regimes in Central and Southeast European countries are analyzed according to their stages of development – stabilization, transition, preparation for the EU and euro zone.

In the early 90s, “pegging” the domestic currency to another one was the most common option, through conventional arrangements in which the exchange rate could fluctuate by $\pm 1\%$ of the established rate or be maintained within the limits of a wider fluctuation band. The choice was based on the wish to utilize the exchange rate as nominal anchor during the macroeconomic stabilization period. Czech Republic and Slovakia continued even after 1993 to peg their domestic currencies to a basket of currencies consisting of the US dollar and the Deutsche mark. Hungary as well pegged its domestic currency to a basket of currencies consisting of the US dollar and the Deutsche mark in order to maintain a stable exchange rate for a certain period, with changes imposed by market requirements. After a period of fixed rates, Poland officially introduced in 1991 the “pegging” regime, anchoring its domestic currency to a basket of currencies consisting of the US dollar and the Deutsche mark. Estonia introduced the currency board in 1992 on the Deutsche mark. Initially, Latvia and Lithuania adopted flexible regimes (managed floating) but after 1994, they took on “pegging” regimes, Lithuania adopting the US dollar currency board. Bulgaria, Slovenia and Romania adopted flexible regimes, despite their high inflation rates. This was due to their low foreign currency reserves in the early 90s, approximately 1/5 of the reserves of Poland and Hungary, fact that made “pegging” very difficult. From the early 1990s until the beginning of 2001 most Southeast European countries’ exchange rate regimes moved steadily to the euro.

Starting with the late 90s, there was a new trend: countries moved towards either flexible regimes or very rigid ones. General progress in economic stabilization, including economic growth, substantial deflation, and the liberalization of the capital account attracted significant capital flows. In some countries, especially in those with fixed exchange rates (Czech Republic, Hungary and Slovakia), these capital inflows required wide-scale and expensive interventions. Consequently, some countries started to turn towards more flexible currency regimes, while others – such as the Baltic States and Poland – stuck to their fixed or intermediate regimes. Lithuania, Estonia and Bulgaria settled on a tight peg to euro through currency boards. Latvia pegged its currency to the SDR until January 1, 2005 and then to the euro, Hungary adopted in 2001 a regime comparable to the ERM II and Poland, the Czech Republic, Slovenia, Slovakia, Romania and Turkey use floating regimes. A number of smaller countries are holding on to the euro as a nominal anchor (from tightly managed float to unilateral euroization).

Relatively recent changes in monetary policies in new EU member states have been induced by the need to align to institutional requirements imposed by the euro area.

The differences between “de facto” and “de jure” exchange rates appear at the beginning of transition period, when several countries announced more rigid exchange rates than the ones they used. Czech Republic, Slovakia and Hungary announced “pegging” regimes, but in fact they used intermediate

or floating regimes. After “de jure” classification, Poland had an intermediate regime, but in reality, the Polish zloty was floating. This phenomenon appeared when by using fixed exchange rates, several countries had to face situations that required a high degree of flexibility. However, central banks did not enjoy then enough credibility so as to adopt flexible currency regimes. During the stabilization period, the floating regime was more frequent in reality suggesting a “fear of floating”. Slovenia had a different approach. Because of “fear of floating”, Slovenia announced that the domestic currency was floating, while the monetary authority was recurrently intervening on the currency market. This approach was due to the fact that Slovenia did not have a sufficient foreign currency reserve.

Frommel and Schobert (2006) discuss “de jure” versus “de facto” exchange rate regimes in Central and East European countries from 1994 to 2004. Their results indicate that the IMF’s classification as a crawling peg was “de facto” regime in Slovenia, the Romanian regime appeared to be a crawling peg using a basket of euro and US dollar, the Polish zloty and the Hungarian forint have behaved according to their officially announced regimes, while the Czech and Slovak regimes exhibit limited implicit Deutsche mark or euro targeting within a horizontal band.

Today’s currency arrangements in European countries are dynamic on the one hand due to their permanent diversification and on the other hand because the values established this way are rapidly changing.

During the current financial crisis, a number of countries abandoned their previously exchange rate arrangements: from free floating to managed floating (Albania, Iceland, Switzerland); from pegged exchange rate within fluctuation bands to euro to managed floating (Hungary); from managed floating to free floating (Czech Republic); from managed floating (Croatia) and conventional peg to euro (Macedonia) to a stabilized arrangement, with euro as reference currency; from crawling peg to a stabilized arrangement, with a composite anchor (Azerbaijan).

Table 1 shows the changes regarding exchange rate arrangements and monetary policy strategies of the European countries between 2006 and 2011.

Table 1: Exchange rate arrangements and monetary policy strategies in European countries

Country	Exchange rate regime	Monetary policy strategy	Exchange rate regime	Monetary policy strategy
	2006		2011	
Albania	Free floating	Monetary aggregate targeting	Managed floating	Inflation targeting
Andorra	Unilateral Euroisation	Exchange rate targeting	Unilateral Euroisation	Exchange rate targeting
Armenia	Managed floating	IMF monetary program	Managed floating	Inflation targeting
Azerbaijan	Crawling peg	Other monetary strategy	Stabilized arrangement with a composite anchor (70% USD, 30% EUR since March 2008, previously 80% USD, 20% EUR)	Exchange rate targeting
Belarus	Conventional peg to euro	Exchange rate targeting	Pegged exchange rate within horizontal bands to a composite anchor	Exchange rate targeting
Bosnia-Herzegovina	Currency board peg to euro	Exchange rate targeting	Currency board peg to euro	Exchange rate targeting
Bulgaria	Currency board peg to euro	Exchange rate targeting	Currency board peg to euro	Exchange rate targeting
Croatia	Managed floating	Other monetary strategy	Stabilized arrangement with euro as reference currency	Exchange rate targeting
Czech Republic	Managed floating with euro as reference	Inflation targeting	Free floating	Inflation targeting

	currency			
Cyprus	Pegged exchange rate within fluctuation bands to euro ($\pm 15\%$) - ERM II (May 2005)	Exchange rate targeting	In euro zone since 1 January 2008	
Denmark	ERM II ($\pm 2,25\%$)	Exchange rate targeting	Conventional peg to euro	Exchange rate targeting
Estonia	Currency board peg to euro - ERM II (June 2004)	Exchange rate targeting	In euro zone since 1 January 2011	
Georgia	Managed floating	IMF monetary program	Other managed arrangement	Inflation targeting
Hungary	Pegged exchange rate within fluctuation bands to euro ($\pm 15\%$)	Inflation targeting and Exchange rate targeting	Managed floating	Inflation targeting
Iceland	Free floating	Inflation targeting	Managed floating	Inflation targeting
Macedonia	Conventional peg to euro	Exchange rate targeting	Stabilized arrangement, with euro as reference currency	Exchange rate targeting
Moldova	Managed floating	Monetary aggregate targeting	Managed floating	Monetary aggregate targeting
Monaco	Unilateral Euroisation	Exchange rate targeting	Unilateral Euroisation	Exchange rate targeting
Montenegro	-		Unilateral Euroisation	Exchange rate targeting
Latvia	Fixed pegging to euro - ERM II (May 2005)	Exchange rate targeting	Fixed pegging to euro - ERM II	Exchange rate targeting
Lithuania	Currency board peg to euro - ERM II (June 2004)	Exchange rate targeting	Currency board peg to euro - ERM II	Exchange rate targeting
Malta	Fixed pegging to euro - ERM II (May 2005)	Exchange rate targeting	In euro zone since 1 January 2008	
Norway	Free floating	Inflation targeting	Free floating	Inflation targeting
Poland	Free floating	Inflation targeting	Free floating	Inflation targeting
Romania	Managed floating with euro as reference currency	Inflation targeting	Managed floating	Inflation targeting
Russia	Managed floating with a composite anchor	Other monetary strategy	Other managed arrangement with a composite anchor (45% EUR since February 2007, previously 40% EUR)	Exchange rate targeting
San Marino	Euroisation	Exchange rate targeting	Euroisation	Exchange rate targeting
Serbia	Managed floating	Inflation targeting	Managed floating	Inflation targeting
Slovakia	Pegged exchange rate within fluctuation bands to euro ($\pm 15\%$) - ERM II (November 2005)	Inflation targeting and Exchange rate targeting	In euro zone since 1 January 2009	
Slovenia	Pegged exchange rate within unspecified fluctuation bands - ERM II (June 2004)	Exchange rate targeting	In euro zone since 1 January 2007	
Sweden	Free floating	Inflation targeting	Free floating	Inflation targeting
Switzerland	Free floating	Other monetary	Managed floating	Inflation targeting

		strategy		
Turkey	Free floating	Inflation targeting	Free floating	Inflation targeting
Ukraine	Conventional peg	Exchange rate targeting	Other managed arrangement	Monetary aggregate targeting
United Kingdom	Free floating	Inflation targeting	Free floating	Inflation targeting
Vatican	Euroisation	Exchange rate targeting	Euroisation	Exchange rate targeting
Euro zone countries (January 2011): Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia, Spain			Free floating	Monetary aggregate and inflation targeting

Source: Deutsche Bundesbank (2007-2011); IMF (2000-2011).

The euro plays an important “de jure”/“de facto” role for the economies of European countries. 17 of the 48 analyzed countries are members of the euro zone, 3 run currency boards (Bosnia-Herzegovina, Bulgaria, Lithuania), 5 territories (Republic of San Marino, Vatican City, Principality of Monaco, Andorra, Montenegro) have adopted the euro as their legal tender and 8 countries (Albania, Armenia, Hungary, Iceland, Moldova, Romania, Serbia, Switzerland) practice managed floating, coupled with inflation targeting. Free floating is found in 6 countries (Czech Republic, Norway, Poland, Sweden, Turkey, United Kingdom), exchange rate arrangement with a composite anchor appears in 3 countries (Azerbaijan, Belarus, Russia) and other managed arrangement in another 3 countries (Georgia, Latvia, Ukraine). Denmark has a conventional peg to euro, while Croatia and Macedonia have a stabilized exchange rate arrangement, with euro as reference currency.

From one stage to another, every country establishes its monetary policy objective in correlation to the exchange rate fluctuations. For example, inflation targeting was officially introduced in the Czech Republic (1998), Poland (1999), Hungary (2001), Slovenia (2002) and Romania (2005), moment that coincided with the official orientation towards flexible exchange rate arrangements. Orlowski (2005) consider that inflation targeting is a viable monetary policy choice for EU new member countries that facilitates both economic transition and monetary convergence to the euro zone, implying that the monetary convergence begins with flexible inflation targeting and concludes with euroization.

4. Conclusions

The analysis of exchange rate arrangements in European countries leads to a number of conclusions that can be summarised as follows.

Geographical and institutional issues underlay the use of the euro in the exchange rate regimes of countries outside the euro zone, as it was observed mainly in EU neighbouring or with special institutional arrangements regions or countries. The reference currency setting is an internal factor, which influence the exchange rate of the domestic currency with reference to the foreign currency. In such conditions, the monetary policy promoted by a certain country has become more important than it used to be in the past. In other words, any exchange rate arrangement requires complementary policies to increase its efficiency.

During the current financial crisis, a number of countries abandoned their previously exchange rate arrangements: from free floating to managed floating (Albania, Iceland, Switzerland); from pegged exchange rate within fluctuation bands to euro to managed floating (Hungary); from managed floating to free floating (Czech Republic); from managed floating (Croatia) and conventional peg to euro (Macedonia) to a stabilized arrangement, with euro as reference currency; from crawling peg to a stabilized arrangement, with a composite anchor (Azerbaijan).

5. Acknowledgement

This work was supported by the project "Post-Doctoral Studies in Economics: training program for elite researchers - SPODE" co-funded from the European Social Fund through the Development of Human Resources Operational Programme 2007-2013, contract no. POSDRU/89/1.5/S/61755.

6. References

- Barisitz, S. (2008) Paths of Monetary Transition and Modernization: Exchange Rate Regimes and

- Monetary Policy in Southeastern Europe including Turkey from the 1990s to 2006, *Workshops Proceedings of Oesterreichische Nationalbank*, No. 13, p. 349-386.
- Bordo, M., Christl, J., Just, C., Harold, J. (2004) Exchange Rate Regimes: Past, Present and Future, *Oesterreichische Nationalbank Working Paper*, No. 92.
 - Calvo, G., Reinhart, C. (2002) Fear of Floating, *Quarterly Journal of Economics*, Vol. 117:2, p. 379-408.
 - Christl, J., Just, C. (2004) Regional Monetary Arrangements – Are Currency Unions the Way Forward?, *Proceedings of Oesterreichische Nationalbank*, No. 3, p. 90-111.
 - De Grauwe, P., Grimaldi, M. (2002) Exchange Rate Regimes and Financial Vulnerability, *EIB Papers*, Vol. 7, No. 2, p. 33-48.
 - Eichengreen, B., Razo-Garcia, R. (2005) The International Monetary System in the Last and Next 20 Years, *Economic Policy Panel*.
 - Esaka, T. (2010) De Facto Exchange Rate Regimes and Currency Crises: Are Pegged Regimes with Capital Account Liberalization really More Prone to Speculative Attacks?, *Journal of Banking & Finance*, No. 34, p. 1109-1128.
 - Fischer, S. (2001) Exchange Rate Regimes: Is the Bipolar View Correct?, *Journal of Economic Perspectives*, No. 15:2.
 - Frommel, M., Schobert, F. (2006) Exchange Rate Regimes in Central and East European Countries: Deeds vs. Words, *Journal of Comparative Economics*, No. 34, p. 467-483.
 - Ghosh, A., Ostry, J., Tsangarides C. (2010) Exchange Rate Regimes and the Stability of the International Monetary System, *IMF Occasional Paper*, No. 270.
 - Levi, M. (2005) *International Finance*, 4th Edition, Routledge, New York.
 - Levy-Yeyati, E., Sturzenegger, F. (2001) Exchange Rate Regimes and Economic Performances, *IMF Staff Papers*, Vol. 47.
 - Levy-Yeyati, E., Sturzenegger, F. (2005) Classifying Exchange Rate Regimes: Deeds vs. Words”, *European Economic Review*, No. 49, p. 1603-1635.
 - Obstfeld, M., Rogoff, K. (1995) The Mirage of Fixed Exchange Rates, *Journal of Economic Perspectives*, No. 4.
 - Orłowski, L. (2005) Monetary Convergence of the EU Accession Countries to the Eurozone: A Theoretical Framework and Policy Implications, *Journal of Banking and Finance*, Elsevier, Vol. 29, p. 203-225.
 - Reinhart, C., Rogoff, K. (2002) The Modern History of Exchange Rate Arrangements: A Reinterpretation, *NBER Working Paper*, No. 8963.
 - Rogoff, K., Husain, A., Mody, A., Brooks, R., Oomes, N. (2003) Evolution and Performance of Exchange Rate Regimes, *IMF Working Paper*, No. 243.
 - Schadler, S., Drummond, P., Kuijs, L., Murgasova, Z., Van Elkan, R. (2004) Adopting the Euro in Central Europe - Challenges of the Next Step in European Integration, *IMF Staff Study*.
 - Toma, R. (2007) *Exchange Rate Arrangements in Central and Eastern European Countries: Evolutions and Characteristics*. Available at http://mpa.ub.uni-muenchen.de/1967/1/MPRA_paper_1967.pdf, unpublished.
 - Tsangarides, C. (2010) Crisis and Recovery: Role of the Exchange Rate Regime in Emerging Market Countries, *IMF Working Paper*, WP/10/242.
 - *** Deutsche Bundesbank, *Exchange Rate Statistics*, 2007-2011.
 - *** IMF, *Exchange Arrangements and Exchange Restrict*, 2000-2011.

QUALITATIVE ANALYSIS OF THE SIGNIFICANCE OF CREDIT RATING

ORHEIAN Oana Mihaela

Teaching assistant/Ph. D. Student, Academy of Economic Studies, Institute for Doctoral Studies, Bucharest, Romania, oana.orheian@gmail.com

Abstract: *Rating plays an essential role on the financial market because the investors use to evaluate credit risk as a financial instrument. The rating measures the probability of full payment and debt maturity on each class of debt instruments. Credit rating is one of the tools investors can use when deciding on the purchase of bonds and other fixed income investments. Rating agencies are designed to determine the likelihood of payment default for all types of assets and liabilities of the issuers. The article aims to define the main types of credit ratings used by major rating agencies that control the oligopolistic market.*

Key words: rating, credit rating agencies, ratings typology

JEL classification: G 24

1. Introduction

Credit ratings are opinions about credit risk published by a rating agency. They express opinions about the ability and willingness of an issuer, such as a corporation, state or city government, to meet its financial obligations in accordance with the terms of those obligations. Credit ratings are also opinions about the credit quality of an issue, such as a bond or other debt obligation, and the relative likelihood that it may default.

Rating is characterized by two essential aspects: evaluates risk and informs the market and regulating authorities—fundamental elements for financial capital allocation and for financial system functioning (Dudian, M., Popa R.A., Vrabie, A., Stefanescu, A, 2009). According to the financial dictionary *credit rating* refers to an assessment of the creditworthiness of individuals and corporations. It is based on the history of borrowing and repayment as well as the availability of assets and the extent of liabilities.

The rating itself is the information and the value of ratings is simply derived from the influence on a debt security's regulatory status (Dittrich 2007, pg.11) Ratings should not be viewed as assurances of credit quality or exact measures of the likelihood of default. Rather, ratings denote a relative level of credit risk that reflects a rating agency's carefully considered and analytically informed opinion as to the creditworthiness of an issuer or the credit quality of a particular debt issue.

2. Credit rating agencies.

Credit rating agencies provide evaluations of the likelihood that obligations will be repaid. There are three major credit rating agencies on the international market. These "Big three" agencies make the game rules.

Those agencies are: Moody's, Standard & Poor's, and Fitch. Moody's conducts its U.S. ratings business through Moody's Investor Service, a unit of Moody's Corporation, a publicly traded company. Standard & Poor's is a unit of The McGraw-Hill Companies, Inc., a publicly traded company, and provides credit ratings in the U.S. and abroad. Fitch Ratings is a subsidiary of Fitch Group, owned by FIMALAC, France, and like Moody's Investor Service and Standard & Poor's, provides credit rating services. For example, in 2008 they controlled the 98 percent of the US market for debt ratings, according to the SEC (D. Evans and C. Salas, 2009).

But those agencies are not the only one on the market. There are also several smaller specialized companies, mostly domestic, without market power. In June 2008, four other companies were registered with the SEC as NRSROs: A.M. Best Company, Inc., DBRS Ltd., Japan Credit Rating Agency, Ltd., and Rating and Investment Information, Inc. Since then, three more have been approved as NRSROs: Realpoint LLC, LACE Financial Corp., and Egan-Jones Rating Company. The previously registered NRSROs rely primarily on an issuer-pays business model, while the three newly registered agencies rely primarily on a subscriber-pays model. (SEC NRSRO Report, 2008). For example, A.M. Best is primarily active in insurance ratings, and Dominion Bond Rating Services is primarily active in rating Canadian issues.

The agencies issue ratings on individual issues, such as particular structured finance offerings and corporate, government, and municipal bonds (SEC, 2008). Credit rating agencies use their own proprietary rating methodologies for evaluating the creditworthiness of issuers and the credit quality of debt issues.

Risk rating attached to a corporation, a country, a project or a security highlights two aspects: the risk of payment default and recovery options (Fitchratings, 2011). According to the Moody's agency "rating helps investors to determine the possibility of recovery of losses from investments in certain assets. From technical point of view, the rating is an opinion on the future capacity that a bond, an issuer or debtor will have to make timely and complete all payments, including related interests". The system of rating securities was originated by John Moody in 1909. The purpose of Moody's ratings is to provide investors with a simple system of gradation by which future relative creditworthiness of securities may be gauged. Standard & Poor's defines the ratings as "current opinions on the future credibility of an issue or issuer". Standard & Poor's credit ratings express forward-looking opinions about the relative creditworthiness of borrowers and the securities they issue (www.standard&poor's.com).

Credit rating agencies have standardized their elaboration procedures for the rating grade and have clear rules of corporate governance (the so-called "Code of Conduct"). Usually, ratings are updated annually based on new financial statements provided by the companies and changes in business environment.

Fitch Ratings was founded as the Fitch Publishing Company on December 24, 1913 by John Knowles Fitch. Located in the heart of the Financial District in New York City, the Fitch Publishing Company began as a publisher of financial statistics. In 1924, the Fitch Publishing Company first introduced the now familiar "AAA" to "D" ratings scale to meet the growing demand for independent analysis of financial securities. Fitch Ratings was one of the three ratings agencies first recognized by the Securities and Exchange Commission as a nationally recognized statistical rating organization (NRSRO) in 1975. Today, Fitch Ratings has over 2,000 professionals at its 50 worldwide offices.

Moody's Corporation (NYSE: MCO) is the parent company of Moody's Investors Service, which provides credit ratings and research covering debt instruments and securities, and Moody's Analytics, which offers leading-edge software, advisory services and research for credit and economic analysis and financial risk management. The Corporation, which reported revenue of \$2.3 billion in 2011, employs approximately 6,100 people worldwide and maintains a presence in 28 countries (www.moody's.com, 2012).

Standard & Poor's rating services has offices in 23 countries and a history that dates back more than 150 years, Standard & Poor's is known to investors worldwide as a leader of financial-market intelligence. Today Standard & Poor's strives to provide investors who want to make better informed investment decisions with market intelligence in the form of credit ratings, indices, investment research and risk evaluations and solutions.

Standard & Poor's Ratings Services traces its history back to 1860, the year that Henry Varnum Poor published the History of Railroads and Canals of the United States. Poor was concerned about the lack of quality information available to investors and embarked on a campaign to publicize details of corporate operations. Standard & Poor's has been publishing credit ratings since 1916, providing investors and market participants worldwide with independent analysis of credit risk (<http://www.standardandpoors.com/about-sp/main/en/eu>).

3. Types of credit rating

Depending on the protection degree desired by the creditor, specific loans are given specific ratings (ratings issue) on the credibility of the debtor (issuer rating). But rating agencies are designed to determine the likelihood of payment default for all types of assets and liabilities of the issuers.

Table 1: Typology of ratings assigned by Fitch, Standard & Poor's and Moody's

Credit Agencies	Fitch	Standard & Poor's	Moody's
Types of ratings	-corporate finance -financial institutions -Global Infrastructure & Project Finance -insurance -public finance: interational and US public finance -structured finance - Sovereigns & Supranationals	- Corporates - Financial Institutions - Fund Ratings - Insurance - International Public Finance - Sovereigns - Structured Finance	-Corporates -Financial Institutions -Structured Finance -Managed Investments -Infrastructure & Project Finance -Sovereign & Supranational -Sub-Sovereign -U.S. Public Finance

Source: www.fitchratings.com, www.standardandpoors.com and www.Moodys.com

The aim of corporate credit ratings is to measure the credit worthiness of corporations. Rather than estimating the overall health of a company, these ratings are an indication of how likely a corporation is to pay back it's loans; such as bonds. The credit rating of a corporation is a financial indicator to potential investors of debtsecurities such as bonds. Credit rating is usually of a financial instrument such as a bond, rather than the whole corporation. These are assigned by credit rating agencies such as A. M. Best, Dun & Bradstreet, Standard & Poor's, Moody's or Fitch Ratings and have letter designations such as A, B, C, D (http://en.wikipedia.org/wiki/Credit_rating).

At Fitch Ratings corporate finance include: corporates, global power, islamic finance, leveraged finance.

There are a wide range of global corporate sectors - from aerospace and defense to retail and consumer products(Food, beverage and tobacco), Leisure and lodging, Industrial products and services Energy Power & Gas Utilities, chemicals, media, Paper, forest products, metals & mining Transportation Telecommunications Technology. Analysts in the Fitch Ratings Corporates group cover the securities of more than 1,700 companies in those industries. The Global Power group's constituent coverage includes investor-owned power and gas utilities, utility holding companies, independent transmission system operators, public power utilities, and natural gas gathering, storage, and transmission companies. The group provides coverage on the restructuring of the electric industry, the convergence of natural gas and electric companies, and the emergence of independent energy marketers. The Global Power group covers the following sectors: investor-owned power & gas utilities, independent transmission system operators, natural gas pipelines/propane distributors, public power utilities, utility holding companies, wholesale power companies.

The U.S. Leveraged Finance team covers both high yield bonds and leveraged loans. including: Issuer Default Ratings (IDRs), which express an entity's relative probability of default; Recovery Ratings, which reflect instrument-specific expected loss and recovery given default for entities with an IDR rating of 'B+' or below and Company, sector and market research.

Fitch Ratings financial institutions refers to banks, covered bonds, finance&leasing, real estate investment trusts (REITs), securities firms.

Looking at banks, there are more than 3,500 banks around the world in different areas: commercial banks, universal banks, bancassurance, mortgage banks and savings banks, building societies, investment banks & brokerages, hedge funds, commercial finance companies, consumer finance companies, leasing companies. Ratings guidelines are applied to long and short-term foreign currency ratings; long and short-term local currency ratings; and National ratings for emerging markets. Fitch Ratings offers ratings for over 120 covered bonds programmes from 19 countries around the world. The agency currently rates the following types of covered bonds: Australia's covered bonds, contractual covered bonds in Canada, France, New Zealand, Switzerland, the Netherlands, the UK, and the U.S., Cyprus, Denmark Germany, Ireland, Italy, Luxembourg, Norway, Poland, Portugal, Spain. Fitch Ratings financial institutions includes coverage of the largest and most significant financial services firms: commercial banks, universal banks, bancassurance, savings & loans/thrifts, building societies,

investment banks & brokerages, asset managers, hedge funds, commercial finance companies, equipment rental companies, consumer finance companies, leasing companies, mortgage companies, business development companies.

Fitch Ratings provides credit opinions on a variety of infrastructure and project finance transactions on a global basis. It's coverage: transportation infrastructure and projects, power & energy infrastructure and projects, industrial and utilities infrastructure and projects, social infrastructure, whole business securitization.

The Insurance group publishes ratings and research on entities operating in the following sectors of the insurance market: health insurance brokers life and annuity property & casualty reinsurance mortgage. Ratings for public finance covers two sectors: international public finance and US public finance. Fitch Ratings' International Public Finance team covers the foreign and local currency debt of subnational governments and other public sector entities. It refers to: local and regional governments, social housing, higher education, revenue bonds, health care, public transportation. The Fitch Ratings U.S. Public Finance group rates 70 percent of new issues on a par value basis; 90 percent of all states actively issuing debt; 90 percent of all tax-supported issues with par values greater than \$100 million and 90 percent of the largest cities and counties actively issuing debt. The group maintains ratings on 2,700 tax-exempt issuers, and 28,000 issues (<http://www.fitchratings.com/jsp/sector/Sector.faces?selectedTab=Overview&Ne=4293330802%2b1>).

Fitch Ratings Public Finance rates all types of tax-exempt issues. Coverage includes: educational and nonprofit institutions, health care issuers, municipal structured finance transactions, public power projects, revenue-supported bonds, sovereigns and sub-nationals, state governments, tax-exempt housing bonds, tax-supported general obligation bonds, transportation bonds.

Fitch's structured finance include five types: Asset-Backed Commercial Paper (ABCP), Asset-Backed Securities (ABS), Commercial Mortgage-Backed Securities (CMBS), Residential Mortgage-Backed Securities (RMBS), structured credit.

According to Fitch Agency, the Asset-Backed Commercial Paper (ABCP) analytical team assigns and maintains ratings on ABCP programs ranging from single and multi-seller programs to securities-backed and hybrid programs across the U.S., Canada, Europe, Asia, Australia and South Africa. The ABCP team works closely with the appropriate structured or corporate finance analyst when evaluating potential conduit transactions. Fitch Ratings has rated conduits that purchase bank loans, trade receivables, credit card and auto receivables, equipment leases, ABS, mortgages, CBOs/CLOs, mutual fund shares, and insurance premiums, among other assets. Asset-Backed Securities (ABS) analysts cover a wide range of transactions involving securities collateralized by loans, leases, receivables and other assets.

Structured Credit offers investor-focused tools and models, such as the Portfolio Credit Model and enhanced presale reports so investors can make important structured credit judgments with confidence. The team evaluate three fundamental aspects of credit risk: the credit quality of the collateral; the financial structure of the security; and the legal separateness of the issuer, as well as perform on-site asset manager reviews and extensive ongoing surveillance. The Fitch Ratings Structured Credit team covers a variety of structured credit products including: Collateralized debt obligations (CDOs), Collateralized loan obligations (CLOs), Commercial real estate loan (CREL) CDOs, Small and medium enterprises (SME)/Middle market CDOs.

A sovereign credit rating is the credit rating of a sovereign entity, i.e., a national government. The sovereign credit rating indicates the risk level of the investing environment of a country and is used by investors looking to invest abroad. It takes political risk into account (http://en.wikipedia.org/wiki/Credit_rating). Fitch Ratings' sovereign team is providing ratings and insightful research on the foreign and local debt issuance of over 100 countries. Coverage: long-term foreign currency issuer and debt ratings, short-term foreign currency debt ratings, local currency issuer and debt ratings, country ceilings.

Country Ceilings reflect the agency's judgment regarding the risk of capital and exchange controls being imposed by the sovereign authorities that would prevent or materially impede the private sector's ability to convert local currency into foreign currency and transfer to non-resident creditors — transfer and convertibility risk.

Standard & Poor's, assigns and publishes ratings at the request of the corporations, governments, or structured finance arrangers, and in some cases will also issue ratings without request. Standard & Poor's rating process is generally similar for all issuers, including corporations, governments, and financial

institutions, though there are some differences, including rating structured finance instruments. These differences involve the way the process is initiated and conducted, the rating criteria and assumptions that apply, as well as the specific kinds of information that analysts review, particularly the details of the debt issue.

Standard & Poor's published corporateratingsinthe following areas:Aerospace & Defense, Automobiles & Components, Building Materials, Capital Goods, Chemicals, Consumer Products, Containers & Packaging, Energy, Media & Entertainment, Transportation. (<http://www.standardandpoors.com/ratings/corporates/en/eu/>)

Standard & Poor's provides ratings on a broad range of financial institutions including banks; savings institutions; securities firms; mortgage institutions; finance companies; government-sponsored enterprises; asset managers; exchange and clearing corporations; and credit unions. Standard & Poor's provides credit ratings on financial institutions as well as the specific debt instruments they issue. The agency assigned globally over 950 ratings to money market funds, fixed income funds, Exchange Traded Funds (ETF's), Local Government Investment Pools (LGIP's), and separate accounts. Standard & Poor's provides ratings for entities that offer different types of insurance products and services including life insurance, property and casualty insurance, annuities, health insurance, reinsurance, title insurance, mortgage and bond insurance.

Sovereign and International Public Finance Ratings globally rates and provides credit assessments of various debt securities issued by state and local governments, public authorities, and agencies, and government-owned entities. Standard & Poor's rates 123 sovereigns from Asia, Canada, Emerging Markets, Europe, Middle East, Africa, Latin America, Pacific. Standard & Poor's is the global leader in providing ratings and credit-related services for sovereign, sovereign-supported entities and supranational issuers. On the web-site it is posted a list with all the countries ratings in local and foreign currency and also established transfer and convertibility (T&C) assessments for each country. Structured Finance is one of several financial sectors for which Standard & Poor's provides its credit ratings services. Evaluate the potential risks posed by the instrument's legal structure and the credit quality of the assets held by the Special Purpose Entity (SPE). Standard & Poor's rates different types of structured asset classes: Asset-Backed Securities, Covered Bonds, Commercial Mortgage-Backed Securities, Residential Mortgage-Backed Securities, Collateralized Debt Obligations and Servicer Evaluations.

Moody's provides ratings on over 170,000 corporate, government and structured finance securities. Moody's corporate rating includes institutions and their debt instruments across a wide range of global corporate sectors - from aerospace and defense, agricultural products, automotive construction & homebuilding to healthcare and chemicals;Leisure, lodging and entertainment, metals and mining, media and publishing , consumer products, manufacturing, oil and gas, pharmaceuticals, telecommunications, technology and transport.

The market segment of Financial Institutionscover a wide range ofareas: banks, covered bonds, finance companies, government related institutions, insurance, real estate finance, securities and exchanges. Moody's bank sector cover the following regions: North America, Latin America and Caribbean, Europe, Middle East & Africa, Asia Pacific and also the credit union from North America , Latin America & Caribbean, Europe, Middle East & Africa, Asia Pacific. Moody's ratings covered bonds are for the following region: North America, Latin America & Caribbean, Europe, Middle East & Africa, Asia Pacific.

The market segment of finance companies include: Asset Management, Diversified Financial, Finance, Trading Company. The government related institutions are also organized on four regions: North America, Latin America & Caribbean, Europe, Middle East & Africa, Asia Pacific. The insurance market is organized on several segment: insurance brokerage, life and health, mortgage and financial guarantors, property and casualty, reinsurance, the Lloyd's Market and title insurer. The real estate finance is grouped on regions and the securities and exchanges area include the segment exchanges & clearing houses and securities Co. also grouped on regions. The structured finance ratings coverage of asset classes ranging from the traditional, such as mortgages, autos and credit cards, to evolving classes, such as intellectual property and collateralized debt obligations. Global Managed Investments (GMI) Group is responsible for Moody's ratings of asset managers, money market funds, fixed-income funds (bond funds, absolute return funds), exchange funds, hedge funds and other alternative investments. Moody's Infrastructure and Project Finance Research covers debt issued by both public and private infrastructure and project finance issuers like airports and electric, gas and water utilities. Sovereign & Supranational ratings include researches on sovereign nations, sovereign-related agencies, and

supranational institutions. Sub sovereign rating include the research and analysis on regional and local governments, public-sector entities with specialized mandates in both the developed and emerging markets, including mass transportation, health care, water systems, social housing, higher education, and charity trusts. Moody's U.S. Public Finance researches are very complex and examines more than 90% of public debt issued by state and local governments, hospitals, higher education institutions and other tax-exempt entities. Moody's U.S. Public Finance include the ratings for the following sectors: environmental utilities, healthcare providers, Higher educational and not-for-profit organizations, housing, local government, municipal supported products, Power and gas utilities, state government, tourism and economic development, transportation authorities.

4. Conclusions

Credit rating agencies assign ratings to issuers, including corporations, governments, and public finance entities, that issue debt securities, as well as to specific issues, such as bonds, notes, and structured finance instruments. International Ratings can be assigned for **Issuer Credit Ratings and for Issue Credit Ratings**. *Issuer Credit Ratings* (for governments, financial institutions and corporates): these summarise an entity's overall creditworthiness and its ability and willingness to meet its financial obligations as they come due. Ratings assigned to an entity are comparable across international borders. Sectors and the types of ratings that may be assigned are:

- **Sovereigns and Local Government**, analyzing the local currency ratings and foreign currency ratings on Long- and short-term
- **Banks and other Financial Institutions**, analyzing the local currency ratings and foreign currency ratings on Long- and short-term and the financial strength ratings (an opinion of stand-alone financial health), also the support ratings (an assessment of the likelihood that a bank would receive external support in case of financial difficulties)

Corporates analyzing the local currency ratings and foreign currency ratings on Long- and short-term

A sovereign credit rating aims to measure the level of risk when investing in a sovereign entity (e.g national government) it takes into account; political risk, economic performance/projections, structural assessment, debt indicators, access to banks, access to capital markets and other credit ratings. It's broken down into three main scoring categories; economic risk, political risk and financial system risk.

Issue Credit Ratings (for bonds and other financial obligations): these are an opinion of an entity's ability and willingness to honour its financial obligations with respect to a specific bond or other debt instrument. The ratings assigned to the debt issues of financial institutions and corporates can be either short-term or long-term, depending on the time left for the repayment of the financial obligation. A short-term rating is assigned to debt instruments with an original maturity of up to one year.

And because the credit rating acts to facilitate investments, many countries and companies will strive to maintain and improve their ratings, hence ensuring a stable political environment and a more transparent capital market (<http://www.investopedia.com/articles/03/102203.asp#ixzz1tA9uddXI>). A credit rating is a useful tool not only for the investor, but also for the entities looking for investors. An investment grade rating can put a security, company or country on the global radar, attracting foreign money and boosting a nation's economy. Indeed, for emerging market economies, the credit rating is key to showing their worthiness of money from foreign investors.

Credit ratings may also facilitate the process of issuing and purchasing bonds and other debt issues by providing an efficient, widely recognized, and long-standing measure of relative credit risk. Investors and other market participants may use the ratings as a screening device to match the relative credit risk of an issuer or individual debt issue with their own risk tolerance or credit risk guidelines in making investment and business decisions.

The financial crisis has shown that in this sector there are three key problems: *lack of competition*, *excessive confidence* in external ratings in the regulatory framework and *lack of responsibility* for the ratings issued by credit rating agencies, according to a report by the Committee on Economic and Money, on credit rating agencies, drafted by Wolf Klinz.

5. References

- D. Evans and C. Salas (2009) *Flawed Credit Ratings Reap Profits as Regulators Fail Investors*, Bloomberg.com, April 29

- Dittrich, F. (2007). *The Credit Rating Industry: Competition and Regulation*, <http://ssrn.com/991821>
- Dudian, M., Popa R.A., Vrabie, A., Stefanescu, A., (2009) *The Importance of Risk Ratings in Romania*, Electronic copy available at: <http://ssrn.com/abstract=1519896>
- SEC, (2008) *Annual Report on Nationally Recognized Statistical Rating Organizations as Required by Section of the Credit Rating Agency Reform Act of 2006*, June, [2008SEC NRSRO Report]
- WolfKlinz (2011) Report onCreditRating Agencies: Perspectivesfor the Future (2010/2302 (INI)) Committee on Economic and Monetary Affairs, Rapporteur:
- Standard & Poor's (2011). Guide to ratings performance, www.standardandpoors.com
- http://en.wikipedia.org/wiki/Credit_rating
- <http://www.moodys.com>
- <http://www.investopedia.com/articles>
- <http://financial-dictionary.thefreedictionary.com/Credit+Rating>
- <http://www.standardandpoors.com/aboutcreditratings/>
- <http://www.ciratings.com/page/credit-rating-services/types-of-credit-ratings>
- <http://www.standardandpoors.com>
- <http://www.fitchratings.com>

ACCOUNTING MODELS SPECIFIC TO THE INDEPENDENT EXPORT OF GOODS WITH SIGHT COLLECTION

PALIU – POPA Lucia

*Ph. D. Professor, Faculty of Economics and Business Administration,
Constantin Brâncuși University, Târgu Jiu, Romania, univers_cont@yahoo.com*

Abstract: *Based on the role of foreign trade in a country's development and given the importance that economic information has in providing the data necessary for decision making and the accurate reflection of the entities' financial situation and the results of the economic and financial activity, in this paper we intend to address the accounting models specific to the independent export of goods with sight collection, so that the relevant conclusions drawn may provide entities with accounting information to be easily used in establishing indicators required for the process of economic and financial analysis of the business carried out.*

Key words: export, accounting models, delivery terms, assessment, currency

JEL classification: H 32, H 87, M 40, M 41, M 49

1. Introduction

In the complex process of harmonization of national economies to global economic flows, a most important role is played by foreign trade, which has become – especially in recent decades – one of the determinants of economic growth of the market economy (Cerchez, 2007, p. 13). In this context, the development of international business tends to become a necessary condition for the existence of companies, irrespective of size or activity field and its consequence is that internationalization and globalization are fundamental features of this beginning of century and millennium.

Also, we can not help noticing that the extent and implications of foreign trade on other areas of social life have increased considerably over the last five centuries, and today its volume has grown very fast; however, with the development of society and as time went on, foreign trade transactions have undergone significant changes, turning from a simple brokerage operation into an activity creating utilities.

If we consider that in the modern and contemporary period, no country, regardless of the resources available and its size, is able to provide all the goods it needs from domestic production only, then the entities' involvement in developing international business becomes, most of the times, a condition not only for the size of the profit, but also for the existence of that economic unit.

Thus, in today's market economy development and its increasing complexity, the economic information must develop accordingly in scope, content and efficiency so that it should be able to provide the necessary data for decision making, and the financial situation of entities and the results of the economic and financial activity should be accurately reflected.

Looking from this perspective and taking into account the role of foreign trade in a country's economic and social development, in this paper we intend to address the entry in accounts of transactions relating to supplies of goods to entities located outside the European Union and belonging to another customs territory.

Among the many forms of achieving international sales of goods we will look only to the independent export of goods with sight collection, addressing in this respect the financial and accounting peculiarities and the accounting models specific to this form of achieving the supplies of goods to countries which are located in another customs territory.

2. Financial and accounting peculiarities of the independent export of goods

As a form of organization of the indirect way of international sales, the independent export of goods is characterized in that the foreign trade companies (FTC) buy goods from manufacturers or wholesalers in the country which they subsequently sell on external markets located outside the Community area, on their own account and at their own risk. Therefore, both the revenues and costs incurred in exporting goods independently and therefore the results of this activity is reflected in the FTC management, as profit or loss, as appropriate.

Looking from this perspective, we consider that the main problems of the independent export of goods, which significantly influences the organization and management of records for the entities performing such activities, concern the peculiarities of these transactions, which relate to:

- FTC's economic relations with its partners;
- flow of exported goods and hence of the freight performed;
- FTC's financial relations with internal and external partners.

A) FTC's economic relations are legally regulated by firm agreements concluded with the producing entities, with units providing services and beneficiary companies, with the specification that one of the significant items included in these agreements, regardless of the foreign partner, is the price negotiated for the goods exported, depending on the delivery Incoterms 2010, rules that establish the seller's and buyer's responsibilities in carrying out the operations that the delivery involves.

If, in the event of agreements concluded with producing units, the delivery terms, in most cases, concern the land and air freight method, for whose identification the FOB term is used, followed by the name of the transport means and the place of separation of responsibilities on bearing the delivery costs (manufacturer FOB, FTC FOB, Romanian border FOB, customs border truck FOB of the exporting country, border wagon FOB of the exporting country, etc.) i.e. EXW, FCA, for the agreements concluded with external customers the most representative delivery terms are those relating to the maritime and inland waterway freight method, namely: FOB the Romanian port of shipment, CFR or CIF the foreign port of discharge.

In relation to the delivery terms of goods covered by the trade agreements concluded with foreign partners, there is a correlation between the structures of the external sales price, the delivery term of the goods, the method of achieving the delivery and the means of payment (Paliu-Popa and Babucea, 2011).

If we focus attention on the three terms of delivery of goods and their corresponding external price structure, the following conclusions may be drawn:

- two concepts are distinguished in the FOB delivery term: Net FOB, where the foreign price includes only the price of goods and gross FOB, in which case the foreign price is made of the price of goods (net FOB), services on international routes (fees, service rates, etc.) and the foreign interest (for independent export of goods on trade credit);
- in the CFR delivery term, the foreign price is made of the price of goods (net FOB) plus the value of services on international routes (freight, fees, service rates, etc.) and the foreign interest (for independent export of goods on trade credit); the difference from the gross FOB is represented by the transport value;
- three foreign cost components are also delimited in the CIF delivery term, regarding: the price of goods (net FOB), services on international routes (freight, insurance, fees, service rates, etc.) and the foreign interest (for independent export of goods on trade credit), the difference from the foreign price in the CFR delivery term is the insurance value.

In this context, we consider that the foreign price structuring by components is required to reflect revenues in the accounts in compliance with this configurations, namely: the external value of the goods in compliance with the net FOB delivery term shall be recorded as income from the sale of goods (account 707 "Income from sales of goods"), the value related to the external services is recorded as income from sundry activities (account 708 "Revenues from sundry activities") and the foreign interest is reflected as financial income (account 766 "Interest income"). The correlation between the level and structure of foreign price, the delivery term of goods and the settlement date, according to the delivery terms mentioned above and the connection with the accounts in which they are reflected is schematically shown in Table 1.

Table 1: External price structure

Export delivery term	External price structure				
Net FOB	Price of goods (account 707)	-	-	-	-
Gross FOB	Price of goods (account 707)	-	-	Commissions, service rates (account 708)	Interest (account 766)
CFR	Price of goods (account 707)	Freight (account 708)	-	Commissions, service rates (account 708)	Interest (account 766)
CIF	Price of goods (account 707)	Freight (account 708)	Insurance (account 708)	Commissions, service rates (account 708)	Interest (account 766)

It follows that the income of foreign trade companies making export of goods on their own, outside the Community area, are limited to two categories of income that contribute to the turnover formation (account 707 and account 708) and the interest income (account 766), the latter occur only when the sale is made on trade credit.

Referring to the agreements concluded with units providing services, they are usually framework annual agreements, or made for other time spans and refer to the external services (freight, insurance, etc.) to be provided by entities specialized in such operations for all types of international sales of goods.

B) The flow of exported goods corresponds to the routes where the goods purchased from the producing units go through in order to be marketed in the markets outside the Community area, with corresponding implications in accounting for the specific operations, flows that can be reflected, depending on the entities involved in such transaction, as follows:

1. producing unit – FTC – foreign customer;
2. producing unit – FTC – third entities – FTC – foreign customer;
3. producing unit – FTC – third entities – foreign customer;
4. producing unit – foreign customer.

The analysis of the flow of exported goods shows that they are managed by foreign trade companies, but are reflected in different accounts, using for this purpose, as appropriate, the accounts: 371 “Goods”, if the goods pass through the deposits of FTC (flows 1, 2 and 3), 357 “Goods for resale at third parties”, if the goods are sent to third parties for processing, packaging, sorting, etc. (flows 2, 3) or are left in the custody of producing units or third entities from where they are delivered directly to the foreign customers (flows 4, 3).

Because in the latter case presented, the goods do not reach the deposits of FTC, we believe that the cost account 607 “Packaging costs” may be directly used and not an inventory account, considering that the foreign sale invoice issued by FTC is made in the same time with the sales invoice of the producing unit, namely the FTC purchase, without such goods being left in the custody of the unit supplying the goods.

C) FTC’s financial relations with internal and external partners are determined by settlements with third parties, according to the flow regarding the circulation of exported goods, namely:

- on the purchase from the domestic market, FTC pays the producing units the equivalent value of the goods purchased in domestic currency from own or borrowed resources;
- on the sale on the foreign market, FTC pays the value of external services (freight, insurance, brokerage fees, service rates, etc.) to the entities providing services in foreign currency and the conversion in RON is performed at the exchange rate of the day on which payment is made, thus foreign exchange differences result following its evolution from the service invoice date and the payment date thereof, differences that affect, as appropriate, the entity’s financial income (account 765 “Foreign exchange gains”), when the exchange differences are favorable (the rate on the payment date is lower than the rate on the invoice date) or financial expenses (account 665 “Foreign exchange losses”), when the rate differences are unfavorable (the rate on the payment date is greater than the rate on the invoice date);
- on the sale on the foreign market, FTC receives the value of goods sold in foreign currency, which is converted into RON at the exchange rate upon receipt; in this case, favorable or unfavorable foreign exchange differences are also calculated, affecting the financial income (account 765 “Foreign exchange gains”) when the foreign exchange differences are favorable (the rate on the receipt date is greater than the rate when the delivery is invoiced) or financial expenses (account 665 “Foreign exchange losses”), in reverse situation (the rate on the receipt date is lower than the rate when the delivery is invoiced).

However, according to the legal regulations in force, entities that at the end of a month have liquid assets in foreign currency in the accounts opened with banks or the unit’s pay desk, or have debts in foreign currency from the relations with companies providing external services or foreign currency receivables from the delivery of goods to external customers, are required to assess these amounts (liquid assets, debts, receivables) taking into account the exchange rate communicated by the National Bank of Romania on the last banking day of each month, when the favorable or unfavorable foreign exchange differences are calculated, affecting, as noted above, the financial income or expenses of FTC; such assessment makes it possible to update the rates closer to the time of any future receipts or payments. (Order of the Ministry of Public Finance no. 3055/2009 approving the Accounting Regulations in

compliance with the European directives, para. 174 and para. 186 from the Appendix with Accounting Regulations compliant with the 4th Directive of the European Economic Community). Thus, each reporting period (calendar month) is affected with the financial income and expenses resulting from exchange rate movements for uncollected receivables and unpaid debts.

Therefore, when we calculate the foreign exchange differences for settlement in foreign currency, the currency movements are envisaged between the invoice date of foreign services or supplies only when they occurred in the same month as their payment or collection, because in the other situations of the exchange rate movements, there is taken into account the rate from the end of the previous month for which the entity has already made the assessment and not that of the invoice date, but overall, the result of the foreign exchange differences consists of partial monthly results.

It follows that, in addition to the income corresponding to the foreign price structure, FTC may obtain revenues or record expenses from the foreign exchange differences related to the brokerage of foreign services provision which are usually included in the amount invoiced to the foreign customers at a level equal to that recorded in the documents issued by the providing entities.

You may also note that the deadline for receipt of the goods exported, according to which the export is structured into independent export of goods with collection on sight and on time, influences the accounting procedures, meaning that the foreign price is increased by the foreign interest associated with the loans contracted by FTC, if the foreign customer does not have financial resources to pay the purchase.

In conclusion, in terms of accounting, foreign trade companies reflect in their accounts both the revenues and costs from the international marketing of goods on their own and the other costs and revenues generated by export performance, including the operating expenses such as administration and management.

3. Accounting models specific to the independent export of goods with sight collection

The independent export of goods with sight collection made by foreign trade companies requires, in a first step, the purchase of goods, generally from the producing units and in a later stage, the delivery of goods to entities outside the Community area, steps that generate the classification of economic and financial operations into two categories:

- operations concerning the inventories of goods, which differ according to the method used for their synthetic records (perpetual inventory method and periodic inventory method), being also customized in relation to the flow of exported goods;
- operations concerning the international marketing of goods.

In this context, in order to create accounting models specific to the independent export of goods with sight collection made by a foreign trade company, we will start from the first flow of exported goods described in the previous section (producing unit – FTC – foreign customer) and we will focus attention on S.C. Export – Import S.A., an entity under study, which on 10/24/2011 had liquid assets in the foreign currency bank account in the amount of €4,500.00, and in October and November 2011 performed the following operations concerning the independent export of goods:

- purchase of goods from a domestic supplier, in the amount of RON 40,000.00, VAT excluded that it subsequently sold to a foreign customer from outside the Community area, on 10/24/2011, at the foreign price established in the CIF term of €15,000.00, knowing that the domestic debt is payable on the invoice date and the receivable was collected on 11/15/2011;
- contracting the freight with a foreign partner, in the amount of €1,500.00, service invoiced on 10/24/2011 and paid on 10/31/2011;
- insurance of goods on international routes for the amount of €500.00, amount invoiced and paid on 10/24/2011.

Referring strictly to the international delivery of goods, we specify that accounting evidence is based on the following documents: foreign invoice, foreign invoice for internal use, shipping documents, freight, insurance and customs (international truck waybill or bill of lading, insurance policy, customs declaration for export) and settlement documents (payment order, letter of credit, documentary collection, etc.) (Visan, 2009, p. 70).

An important role in the accounting work is held by the foreign invoice for internal use, which is actually a calculation document (context in which it may be called “detailed export schedule”) used for internal calculation needs of the key indicators regarding export, such as: the external value corresponding to the actual delivery term, the external circulation costs by their types, the external value

of goods (net FOB); the calculations are made in the foreign invoice for internal use, both in foreign and domestic currency, at the exchange rate on the delivery invoice date.

In this context, if we consider the data on the international delivery of goods, which is done in the CIF delivery term, then the foreign invoice for internal use, which is also used as detailed export schedule, includes besides the external amount corresponding to the delivery term, the external amount of net FOB goods and the amount of freight and insurance on international routes is shown in Table 2.

Table 2: External invoice for internal use

No.	Calculation elements	Amount in currency (Euro)	Amount in RON (1 Euro = RON 4,3230)
1.	External value of CIF	15,000	64,845.00
2.	International road insurance	500	2,161.50
3.	External transport	1,500	6,484.50
4.	External value of net FOB [1-(2 + 3)]	13,000	56,199.00

For S.C. Export – Import S.A, the situation exposed generates accounting items that presented in order of their logical sequence include both operations related to inventories and operations concerning their external marketing, without excluding settlements with third parties, records that occur both in October and in November:

a) Accounting operations carried out in October 2011:

- purchase of goods from the producing unit, at a price of RON 40,000.00, VAT excluded (RON 40,000.00 x 24% = RON 9,600.00):

	%			
371 "Goods"	=	401 "Suppliers"		49,600.00
4426 "Input value added tax"				40,000.00
				9,600.00

- supplier's payment from the bank account in RON:

401 "Suppliers"	=	5121 "Cash at bank in lei"		49,600.00
------------------------	---	-----------------------------------	--	-----------

- entry of the foreign invoice for freight services:

624 "Transport of goods and personnel"	=	401 "Suppliers"		6,484.50
---	---	------------------------	--	----------

- evidence of goods insurance services on international routes

613 "Insurance premiums"	=	401 "Suppliers"		2,161.50
---------------------------------	---	------------------------	--	----------

- delivery of goods outside the Community area, at the external value of CIF, which besides the net FOB value of the goods sold also includes the external services concerning freight and insurance, services reflected before the delivery operation:

4111 "Customers"		%		64,845.00
	=	707 "Income from sales of goods"		56,199.00
		708 "Revenues from sundry activities"		8,646.00

- in the same time, the goods sold are written-off from the inventory, at the acquisition cost, using the specific identification method for this purpose. According to the International Accounting Standard 2 (IAS 2), Inventories, para. 23 and para. 24, the specific identification method is applied to inventory elements that can be identified and individualized by each item or category of goods, whether purchased or produced. However, the specific identification of costs may not be applied where the inventories have a large number of items that are usually interchangeable,

because the selection method of types remaining in inventories may be used to obtain predictable effects on the profit or loss:

607 "Packaging costs"	=	371 "Goods"	40,000.00
-----------------------	---	-------------	-----------

- payment of the invoice for insurance on international routes, without foreign exchange differences, since the invoice date corresponds to the date of payment:

401 "Suppliers"	=	5124 "Cash at bank in foreign currencies"	2,161.50
-----------------	---	---	----------

- payment of the external services related to freight, with unfavorable exchange rate difference amounting to RON 1.95, calculated as follows:
 - amount in RON on the payment date: $\text{EUR } 1,500.00 \times 4.3243 \text{ RON/EUR} = \text{RON } 6,486.45$;
 - amount in RON on the invoice date: $\text{EUR } 1,500.00 \times 4.3230 \text{ RON/EUR} = \text{RON } 6,484.50$;
 - exchange rate difference (unfavorable): $\text{RON } 6,486.45 - \text{RON } 6,484.50 = \text{RON } 1.95$.

%	=	5124 "Cash at bank in foreign currencies"	6,486.45
401 "Suppliers"			6,484.50
665 "Foreign exchange losses"			1.95

- at the end of October the foreign exchange differences related to uncollected receivables in foreign currency are calculated and recorded, taking into account the exchange rate communicated by the National Bank of Romania on the last banking day of the month (10/31/2011):
 - amount in RON on 10/31/2011: $\text{EUR } 15,000.00 \times 4.3243 \text{ RON/EUR} = \text{RON } 64,864.50$;
 - amount in RON on the invoice date: $\text{EUR } 15,000.00 \times 4.3230 \text{ RON/EUR} = \text{RON } 64,845.00$;
 - exchange rate difference (favorable): $\text{RON } 64,864.50 - \text{RON } 64,845.00 = \text{RON } 19.50$.

4111 "Customers"	=	765 "Foreign exchange gains"	19.50
------------------	---	------------------------------	-------

- the entry of foreign exchange differences related to liquid assets in foreign currency at the end of the month, based on the statement of account, comparing in this respect the value obtained by applying the exchange rate existing at the end of October with the value obtained from using the exchange rate at the end of September, when the estimate of liquid assets in foreign currency was made, value influenced by the payments made during October: $(\text{€}4,500.00 - \text{€}1,500.00 - \text{€}500.00 = \text{€}2,500.00)$:

- amount in RON on 10/31/2011: $\text{EUR } 2,500 \times 4.3243 \text{ RON/EUR} = \text{RON } 10,810.75$;
- the amount in RON corresponding to the balance of account 5124 "Cash at bank in foreign currencies" before the assessment, with the specification that for the liquid assets in the account at the beginning of the month, the exchange rate of the last day of the previous month is taken into account, when their assessment was made: $(\text{€}4,500.00 \times 4.3533 \text{ RON/Euro}) - (\text{€}500.00 \times 4.3230 \text{ RON/EUR}) - (\text{€}1,500.00 \times 4.3243 \text{ RON/EUR}) = \text{€}19,589.85$ (amount in RON on 09/30/2011) – RON 2,161.50 (insurance amount) – RON 6,486.45 (freight amount) = RON 10,941.90;
- exchange rate difference (unfavorable): $\text{RON } 10,941.90 - \text{RON } 10,810.75 = \text{RON } 131.15$.

665 "Foreign exchange losses"	=	5124 "Cash at bank in foreign currencies"	131.15
-------------------------------	---	---	--------

As a result, the monthly assessment of the balance of debts and receivables in foreign currency provides a continuous update of the same, at a time closer to the time of payment or collection, so that in the month when settlement takes place, the expense or income from exchange rate differences should be reduced. The same reasoning applies to liquid assets in foreign currency, but in this case the monthly update is aimed at gradually bringing this value closer to the end of the fiscal year when such currency values must undergo an assessment in order to be included in the balance sheet at the exchange rate communicated by the National Bank of Romania, valid on the closing date of the fiscal year. (Order of the Ministry of Public Finance no. 3055/2009 approving the Accounting Regulations in compliance with the European directives, para. 56, para. (4) from the Appendix with Accounting Regulations compliant with the 4th Directive of the European Economic Community).

b) Accounting operations carried out in November 2011:

- collection of the external receivable related to the goods delivered, with favorable exchange rate difference amounting to RON 366, calculated as follows:
 - amount in RON on the receipt date: $EUR\ 15,000.00 \times RON\ 4.3487 = RON\ 65,230.50$;
 - amount in RON on 10/31/2011: $EUR\ 15,000.00 \times 4.3243\ RON/EUR = RON\ 64,864.50$;
 - exchange rate difference (favorable): $RON\ 65,230.50 - RON\ 64,864.50 = RON\ 366$.

5124 "Cash at bank in foreign currencies"	=	%	65,230.50
		4111 "Customers"	64,864.50
		765 "Foreign exchange gains"	366.00

- assessment of the liquid assets in the foreign currency bank account opened on 11/30/2011 ($€2,500.00 + €15,000.00 = €17,500.00$) when the foreign exchange differences are calculated and recorded, as follows:
 - amount in RON on 11/30/2011: $EUR\ 17,500.00 \times 4.3539\ RON/EUR = RON\ 76,193.25$;
 - amount in RON corresponding to the liquid assets in the account before assessment, starting from the balance of October influenced by the turnover of November: $(€2,500.00 \times 4.3243\ RON/EUR) + (€15,000.00 \times 4.3487\ RON/EUR) = RON\ 10,810.75$ (amount in RON on 10/31/2011) + $RON\ 65,230.50$ (amount of the debt received) = $RON\ 76,041.25$;
 - exchange rate difference (favorable): $RON\ 76,193.25 - RON\ 76,041.25 = RON\ 152$.

5124 "Cash at bank in foreign currencies"	=	765 "Foreign exchange gains"	152.00
--	---	-------------------------------------	--------

We consider it necessary to recall that the accounting models specific to the independent export of goods with sight collection, related to the management of inventories of goods and their external marketing, operations carried out on the flow: producing unit – FTC – foreign customer, are complemented with common accounting techniques regarding the entity's general expenses, that are not directly linked to the international sale of goods, such as: wages and related contributions, depreciation, consumption of materials, telephone, repair, maintenance services etc.

4. Conclusions

Given the importance of accounting information for its users, if we focus attention only on the specific records previously made, we can determine two indicators of financial and economic analysis conducted by a foreign trade entity in accordance with the accounting standards, namely: the turnover, by combining the revenues reflected in the accounts 707 "Income from sales of goods" and 708 "Revenues from sundry activities" ($RON\ 56,199.00 + RON\ 8,646.00 = RON\ 64,845.00$) and the commercial margin, as difference between the net price of goods, namely the income from the sale of goods, reflected in account 707 "Income from sales of goods" and the cost of goods sold, existing in the account 607 "Packaging costs" ($RON\ 56,199.00 - RON\ 40,000.00 = RON\ 16,199.00$).

Specifically, after analyzing the international trade transaction for the sale of goods, it follows that the entity under review had a profit from the said transaction, amounting to $RON\ 16,603.40$, which is determined as difference between the total income ($RON\ 65,382.50$) and total expenditure ($RON\ 48,779.10$), a result which is found in the final balance of the account 121 "Profit and Loss", balance obtained from closing the two categories of accounts. In fact, the final result (profit) is obtained by combining the result of the operating activity, which lies in the merchant's margin ($RON\ 16,199.00$)

because the external services for freight and insurance are included in the external value of CIF, in the same size as that invoiced by the partners providing services, with the result recorded in the financial activity, due to the exchange rate developments (RON 404.40).

However, please note that through the accounting of external services that are part of the external value of goods, corresponding to the CIF term, in the account 708 "Revenues from sundry activities", the turnover is artificially increased, but in compliance with the general accounting standards regarding the determination of this indicator, we can not record such services, for example, directly in the debit of account 4111 "Customer" in correspondence with the credit of account 401 "Suppliers" for the amount of commitments, so that by this accounting artifice we should exclude both the amount of income related to the turnover and the amount of costs, that are equal in this situation.

5. References

- Cerchez, O. (2007) *Eficiența economică a comerțului exterior [Economic Efficiency of Foreign Trade]*, Logos Publishing House, Bucharest.
- Ionescu, I., Băluță, R., Goagă, D. (2007) *Contabilitatea comerțului exterior [Accounting of Foreign Trade]*, Universitaria Publishing House, Craiova.
- Paliu-Popa, L., Babucea, A.G. (2011) Prince Categories Used in Foreign Trade Transactions in the Light of the Delivery Terms Incoterms 2010, *Annals of the "Constantin Brancuși" of Targu Jiu, Economy Series*, Issue 4/2011, p. 155-164.
- Paliu-Popa, L. (2011) Intra – Community Acquisitions versus Imports, *Annals Magazine. Series of Economic Sciences*, Vol. 17th/2011, Timisoara, p. 920-925.
- Paliu-Popa, L., Ecobici, N. (2004) *Contabilitatea comerțului interior și exterior [Accounting of Domestic and Foreign Trade]*, Sitech Publishing House, Craiova.
- Paraschivescu, M.D., Radu, F. (2005) *Concepte și modele contabile în activitatea de comerț exterior [Accounting Concepts and Models in Foreign Trade Activity]*, Tehnopress Publishing House, Iasi.
- Visan, D. (2009) *Contabilitatea tranzacțiilor de comerț internațional [Accounting of International Trade Transactions]*, 1st vol., Tribuna Economică Publishing House, Bucharest.
- *Accounting Law no. 82/1991* as further amended and supplemented.
- *Law no. 571/2003 on the Fiscal Code* as further amended and supplemented.
- *Order of the Ministry of Public Finance no. 3055/2009* approving the Accounting Regulations in compliance with the European directives.
- *International Financial Reporting Standards, Part A and Part B* (2011) CECCAR Publishing House, Bucharest.

RURAL DEVELOPMENT POLICY IN ROMANIA IN THE CONTEXT OF REFORMING THE COMMON AGRICULTURAL POLICY AFTER 2013

PĂUN (ȘARAMET) Georgeta

Ph. D. Student, Academy of Economic Studies Bucharest, Bucharest, Romania, georgeta.saramet@apdrp.ro

PĂUN (CIOBANU) Mihaela Cristina

Ph. D. Student, Academy of Economic Studies Bucharest, Bucharest, Romania, miha_paun@yahoo.com

CIOBANU Laura

Ph. D. Student, Academy of Economic Studies Bucharest, Bucharest, Romania, lauraciobanu2010@yahoo.com

Abstract: *The European Union enlargement to 27 Member States in the year 2007 changed the European agricultural reality, which at present includes a wide range of agriculture types, with large development gaps between the rural areas. Taking into consideration this reality, reforming the Common Agricultural Policy became again a necessity. The new Romanian Agricultural Policy should take this into consideration and try to adjust to the new international context, which is mainly characterized by the instability of markets and price volatility, and provide an integrating vision of the European agricultural policy.*

Key words: rural development, common agricultural policy, reform, challenges.

JEL classification: Q 01, Q 18

1. Introduction

Although the mechanisms necessary to adapt the current Common Agricultural Policy, Romania has achieved targets for increasing labor productivity, while increasing market competitiveness and transformation of current structures viable operating structure as the foundation for integration into the common market. These steps can not be bypassed.

As the old Member States have long exceeded those steps and it is not possible the unitary development at European level through the maintenance of important differences, the new Member States should be supported to speed up reforms. As a result, the Romanian agriculture, although it will evolve at a European level and in the future will have features related to the nature of climatic and human resources which furthers the quality of products, diversified. This specific development is the expression of diversity of Member States to ensure their national identity. Support the European integration process fosters diversity of each Member State market competitiveness of food products.

2. The Concept of Rural Development

The meaning of rural development has been the subject of much debate and little agreement. The definition of rural development varies from one point of view to the other. The definition of rural development may be centered around income criterion in which the concept is made to address the problem of rural poverty. Or it may be defined in sociological concept in which the rural poor represents a reservoir of untapped talent a target group that should be given the opportunity to enjoy the benefits of development through improved education, health and nutrition. This is one of the most important definitions of rural development as the provision of social infrastructures could provide the catalyst that would transform the rural areas.

Rural development may also be seen as an ideology and a practice. It may mean planned change by public agencies based outside the rural areas such as the national Government and International organization. It may also be the bringing of the countryside into an active state, as well as the transformation of the inferior nature of the country side into something more superior in terms of activities.

Rural development as the improvement in the living standard of the rural dwellers by engaging them in productive activities such as the establishment of rural industries that will increase their income. It is seen by these scholars as a means of raising the sustainable living of the rural poor by giving them the opportunity to develop their full potentials.

Rural development can be distinguished from agricultural development which it entails and transcends. In essence Rural Development may imply a broad based re-organization and mobilization of

rural masses in order to enhance their capacity to cope effectively with the daily task of their lives and with changes consequent upon this. According to the World Bank Rural Development must be clearly designed to increase production. It recognizes that improved food supplies and nutrition, together with basic services, such as health and education, not only directly improve the physical well-being and quality of life of the rural poor, but can also indirectly enhance their productivity and their ability to contribute to the national economy.

Rural Development ensures the modernization of the rural society and the transition from its traditional isolation to integration with the national economy. It is concerned with increased agricultural production for urban and international markets. This is essential so as to generate foreign exchange, and to attract revenue to finance public and private consumption and investment. In order to encourage increased production rural development may offer a package of inputs and welfare services for the rural masses. Such inputs and welfare services include physical inputs (such as the provision of feeder roads, water and electrification), social inputs—(namely health and educational facilities) and institutional inputs such as credit facilities, agricultural research facilities, rural extension services among others.

Rural development generally refers to the process of improving the quality of life and economic wellbeing of people living in relatively isolated and sparsely populated areas. Rural development has traditionally centered on the exploitation of land-intensive natural resources such as agriculture and forestry. However, changes in global production networks and increased urbanization have changed the character of rural areas. Increasingly tourism, niche manufacturers, and recreation have replaced resource extraction and agriculture as dominant economic drivers. The need for rural communities to approach development from a wider perspective has created more focus on a broad range of development goals rather than merely creating incentive for agricultural or resource based businesses. Education, entrepreneurship, physical infrastructure, and social infrastructure all play an important role in developing rural regions. Rural development is also characterized by its emphasis on locally produced economic development strategies. In contrast to urban regions, which have many similarities, rural areas are highly distinctive from one another. For this reason there is a large variety of rural development approaches used globally.

3. Rural development in Romania

European Union has the strategic directions to integrate agriculture and rural environment for sustainable development to cope with economic risks and uncertainties, environmental, social and health. New challenges on the global market instability and food crisis have emerged under the impact of climate change, degradation of natural resources and soaring energy prices. The effects of income inequality have generated and rising food prices. As a result of these disturbances, and the predictable results of the negotiations of the WTO on agricultural trade liberalization, the European Union and its Member States shall adjust some provisions of the development strategies aimed at increasing food production in sustainable ways, protect natural resources and increasing the competitiveness of European agriculture on the world market.

Community development in Romania is the condition under which agriculture has not yet made the expected progress in adapting its structures based on competitive market demands, while the national economy is growing. To overcome this situation, which limits the expansion potential of the agricultural economy and measures are required to accelerate the modernization and organization of agriculture in sustainable use of renewable and non renewable resources for food security and economic equilibrium. Although Romania is not facing a food crisis, agricultural production is highly dependent on climatic conditions. Market imbalances have widened in the absence of coherent agricultural policy to ensure a certain continuity of funding during the transition period, due to the de structuring of products in the reform process and difficulties adapting to European agricultural model. Restoring private ownership of land has been separated from their organization and operation were not created to provide basic infrastructure services necessary for the production and marketing of agricultural products. Financing agricultural policy measures is still lacking, both in terms of ensuring the necessary funds and bureaucratic system of allocating them. Therefore, Romania is facing imbalances in the market conditions are not rationally use land particularly favorable to obtain a competitive agricultural supply. Large annual variations in crop conditions in which the yields per hectare and per animal is about half the EU15 average does not provide the power necessary at affordable prices, especially for vulnerable population groups. The perpetuation of this situation and in years with high yields because of lack of storage and marketing structures, inflated and unjustified price of food imports.

In the new global conjuncture, the threat posed by climate change and escalating energy prices requires a new approach to the role of agriculture as a balancing factor for Romania's economic growth model. Romania needs to build a national agricultural policy into line with requirements and rules for the CAP to the market orientation of agriculture, modernization of rural communities and enhancing environmental protection measures. At present concerns for the Common Agricultural Policy implementation mechanisms, the priority now, do not put enough emphasis on the fact that they must be combined with specific measures of association and cooperation of small farmers to increase production to the market, excessive land parceled out to the practice of merging technologies, training food chains, national agricultural research reconsideration.

According to Matoschi O. (2011) highlighting the effects of applying CAP on subsistence agriculture and subsistence farming economy in Romania can draw attention to new possibilities of use of resources that our country has. By reporting the main issues facing the organization of the Romanian rural environment, Romanian authorities can find clear solutions for development, efficiency and performance of this sector. It is very important to support the structures operating in the Romanian economy of subsistence agriculture because they maintain rural communities and provides important social, cultural and environmental services.

Without visible results in the evolution of these structures is difficult for the Romanian agriculture to become short and medium term consistent with the Western European. As a member of the European Union, Romania has a significant community support for the market and especially for rural development, plus national support. Adapting agriculture to EU requirements creates benefits for countries that are in an efficient organizational system such as that of the European Community.

4. History of reforms of Common Agricultural Policy

This section of the paper introduces the Common Agricultural Policy (CAP) from a historical perspective, presenting the different reforms decisive in the development of the CAP: the early years, the Mansholt Plan, the 1992 reform, the Agenda 2000, the 2003 reform, the 2008 Health Check.

In the spring of 1958, the Conference held in Stresa (Italy) brought together a committee of experts consisting of Members of the European Commission, the six Ministers of Agriculture, representatives from farmers' unions and national experts. After the conference, the Commissioner for Agriculture, Sicco Mansholt, was asked to draw up detailed proposals.

European Commission's proposals presented in June 1960 aimed to: establish unity of the market based on the free movement of agricultural products, abolish barriers to trade, organise markets by product with prices being progressively unified and guaranteed, ensure Community preference, enable common intervention, set up a European Agricultural Guidance and Guarantee Fund (EAGGF) and establish financial solidarity.

European Council's decisions taken in January 1962 were:

- the organisation of six common agricultural markets (cereals, pigmeat, eggs, poultrymeat, fruit and vegetables and wine),
- the introduction of rules on competition,
- the establishment of a schedule for dairy products, beef and veal, sugar and other measures to assist intra-Community trade,
- the establishment of the European Agricultural Guidance and Guarantee Fund (EAGGF) to finance the operations of the Common Agricultural Policy (a Guarantee Section for prices and a Guidance Section for structural measures).

The Mansholt Plan

In the late 1960s, when the common organisations of markets (COMs) were gradually being put in place, the European Commission was determined to limit the CAP expenditure. Prepared by the Commissioner Sicco Mansholt, the aim of the first reform plan was to encourage nearly five million farmers to give up farming: that would make it possible to redistribute their land and increase the size of the remaining family farms, in order to make them viable and guarantee for their owners an average annual income comparable to that of all the other workers in the region. The plan was rejected by the agricultural community, and only three directives on agricultural reform were approved in 1972 (modernization of agricultural holdings, abandonment of farming and training of farmers).

The 1992 reform "MacSharry reform"

The MacSharry reform started the shift from product support (through prices) to producer support (through income support). The reform aimed to improve the competitiveness of EU agriculture, stabilise

the agricultural markets, diversify the production and protect the environment, as well as stabilise the EU budget expenditure. Direct payments were introduced in order to compensate for the decrease of the price support (cereal guaranteed prices were lowered by 35%, and beef prices by 15%). Compulsory set-aside and other accompanying measures (agri-environment programmes, afforestation, early retirement, diversification) were also introduced.

Agenda 2000

Agenda 2000 explicitly established economic, social, and environmental goals within a new reformulated set of objectives for the CAP consistent with the requirements of the Amsterdam Treaty.

This had the aim of giving concrete form to a European Model of Agriculture and preserving the diversity of farming systems spread throughout Europe, including regions with specific problems, in the years ahead.

The Agenda 2000 objectives included:

- more market orientation and increased competitiveness,
- food safety and quality,
- stabilization of agricultural incomes,
- integration of environmental concerns into agricultural policy,
- developing the vitality of rural areas,
- simplification,
- strengthened decentralization.

A new rural development policy was introduced as a second pillar of the CAP. This new policy encouraged many rural initiatives while also helped farmers to diversify, to improve their product marketing and to otherwise restructure their businesses.

The 2003 reform

The regular and consistent adjustment of the CAP to pressures from European society and its evolving economy was again illustrated by the new set of reforms initiated in 2003, which aimed at enhancing the competitiveness of the farm sector, promoting a market-oriented, sustainable agriculture and strengthening rural development policy (both funds and policy instruments).

The 2003 reform introduced a radical rebuilding of the CAP, with important innovations such as the 'decoupling' of income support payments to farmers or the introduction of the 'cross-compliance' and the 'modulation'. In the following years, the sugar, fruit and vegetables and wine sectors were also reformed, and a new rural development policy for the financial period 2007-2013 was prepared.

The 2008 CAP "Health Check"

In 2007 the European Commission assessed the implementation of the 2003 CAP reform with a view to introducing the necessary adjustments to the reform process preparing the EU agriculture to adapt better to a rapidly changing environment.

One year later, on 20 November 2008, the EU agriculture ministers reached a political agreement on the CAP "Health Check", the aim of which is to modernise, simplify and streamline the CAP and remove restrictions on farmers, thus helping them to respond better to signals from the market and to face new challenges such as climate change, water management and bio-energy.

5. Reform of Common Agricultural Policy after 2013

The Common Agricultural Policy is due to be reformed by 2013. After a wide-ranging public debate the European Commission presented on 18 November 2010 a Communication on 'The CAP towards 2020', which outlined options for the future CAP and launched the debate with the other institutions and with stakeholders.

On 12 October 2011 the Commission presented a set of legal proposals designed to make the CAP a more effective policy for a more competitive and sustainable agriculture and vibrant rural areas.

5.1. General and specific objectives of the future Common Agricultural Policy

According to the European Commission Communication, the Common Agricultural Policy will remain **an integrated policy, a strong policy, consisting of two support pillars**, in the next years, too. The medium-term strategic objectives are based on the challenges and concerns of the last years, being generous objectives, yet sometimes divergent as scope and means. We list some of these objectives below:

- Preservation of agricultural potential on sustainable bases, so that all EU nationals should benefit from **food security** on the long run. At the same time, it is desired that the EU agricultural

production contributes to the world food security, of the developing countries in particular, in the context in which this will be threatened by the agricultural market instability, by the intensification of climate changes, by the pressures of speculators upon the agricultural prices;

- Support to the farm sector, so that the farms could provide high quality, clean and diversified agricultural products, obtained by the respect of **sustainable production** principles. Hence a efficient agriculture is desired, at the same time protecting the environment, water, animal health and welfare, plant health and by complying with the public health regulations.
- Maintaining a viable rural community, in which agriculture should play an essential role in supplying jobs and should contribute to a **balanced territorial** economic, social and environmental development.

A Common Agricultural Policy is desired that should ensure a territorially and ecologically equilibrated agriculture, and as such, a strongly subsidized agriculture.

Certain economic growth concepts are brought to discussion, desired to be generated by CAP, namely:

- **Intelligent growth** – practically an intensive economic growth, mainly based on the implementation of the technical progress and of the latest technologies and innovations, simultaneously with labour training and respecting the environmental protection values. This should contribute to a viable market-oriented agricultural production, efficient from the economic point of view.
- Sustainable growth – through a sustainable management of natural resources and supply of public goods by agriculture, such as biodiversity, rural landscape preservation, attenuation of climate changes. Practically the maintenance of agriculture as food security supplier is desired, simultaneously with the position of agriculture as supplier of public goods related to environment quality.
- Inclusive growth – by increasing the vitality of rural areas and balanced territorial development, development of local markets and jobs in the rural area, supporting agriculture restructuring and maintaining farmers' incomes in order to maintain agriculture as an occupation throughout Europe.

The general objectives of the future CAP correlated with the specific objectives can be synthesized as follows:

- Viable production of foodstuffs
 - Preservation of farmers' incomes and limiting their variability in the conditions of increased price volatility;
 - Agriculture competitiveness increase. Increase of value-added in agriculture, along the agro-food chains;
 - Compensation of production obtained in the areas with natural constraints, so as to reduce the risk of agricultural land abandonment.
- Sustainable management of environmental resources and climate changes
 - Use of sustainable production methods, which should increase the stock of environmental public goods;
 - Amplification of green growth, through innovation (adopting new technologies, new products, change of production processes, new patterns – bioeconomy);
 - Improving the effect of climate changes by adapting agriculture so as to better respond to the extreme weather conditions.
- Balanced territorial development
 - Support to maintaining population's employment in the rural area;
 - Rural economy development and support to diversification;
 - Support to structural diversity in the farming sector;
 - Improvement of conditions for small farmers and development of local markets, which provide attractiveness and identity to European rural regions.

5.2. Instruments of the future Common Agricultural Policy for rural development

The direct payments under Pillar I remain the main form of support to farmers' incomes. Yet, a new redistribution is imposed, as well as a better targeting of this support. The arguments for the justification of these payments are of economic nature (supplying a basic income for farmers) as well as of environmental nature (support to the supply of public goods).

Utilization of a flat rate (per hectare) in all countries has as a counterargument the diversity of economic and natural conditions from the different zones of Europe.

The Market Measures should be coordinated at European level and they should be uniform in all the member states, as the European producers and consumers operate on a single market.

As regards the **rural development policy** in the Commission Communication, the proposal is to integrate the requirements concerning the economic competitiveness of agriculture and its role in environment and rural areas preservation. The support will be structured along three directions:

- **Agriculture competitiveness, by promoting innovation and restructuring**, so that the resources should be mostly efficiently used.
- **Sustainable management of natural resources**, having in view the implications of climate changes upon the environment, upon agriculture and rural areas, and the need to maintain the land productive capacity.
- **Balanced territorial development**, by increasing the competences and authority of communities and improvement of connections between the rural and urban areas.

Instruments for risk management and agricultural production and farmers' incomes stabilization will be introduced, in conformity with the WTO provisions green box. The support for insurance and mutual funds will be strengthened.

The quality policies will be also strengthened and simplified (including the organic products) as well as the policies of promoting the products on the markets, in order to increase agricultural sector competitiveness. An increased focus on the regional and local CAP is envisaged. They will unblock the rural zones potential, will focus upon the ideas for business and local governance. In this respect, it can be understood that the mix of measures that are going to be funded under Pillar II can be differentiated by regions, depending on the regional and local needs and priorities.

There is a proposal **to give up the present division by axes, with minimum requirements regarding the expenditures under each axis and the replacement with six general priorities for the next programming period:**

- Encouraging the knowledge transfer and innovation;
- Competitiveness increase;
- Promoting the agro-food chain organization and risk management;
- Ecosystem rehabilitation, conservation and consolidation;
- Promoting the efficient use of resources and support to the transition towards an economy with low carbon emissions;
- Promoting social inclusion, poverty alleviation and economic development in the rural areas.

The **co-financing rates** from the part of EU will reach 85 % in the less developed regions, in the ultra-peripheral regions and in the small islands from the Aegean Sea and 50 % in other regions, for the most payments, but they can be higher for the knowledge transfer and innovation, for cooperation, for the establishment of producers' groups, for the subsidies for setting up of young farmers and for the LEADER projects.

The member states will also have the possibility to develop sub-programs with higher support rates, in order to address the needs of young farmers, of small farmers and of mountain areas, as well as for the short supply chains.

5.3. The challenges of the new rural development policy application in Romania

Having in view the number and severity of problems that the rural area is facing as well as the low absorption level of the allocated EU funds up to the present moment, the main challenges with regard to the post-2013 rural development policy are the following:

- **The need to identify and accurately hierarchize the rural development priorities** represents an important challenge for Romania: on one hand the number and severity of problems in the Romanian rural area must be taken into consideration, and on the other hand the relatively poor experience in the implementation of rural development plans can lead to the dispersion of support to a great number of measures and thus, to the diminution of general efficiency of the future program. The rural development measures from the new Community menu have different compatibility levels with Romania's rural and agricultural development objectives. Furthermore, these are not sufficient, even in the conditions of an adequate rural programming, to correct the disequilibria that Romania is facing, the adoption of certain national measures being

also necessary. It is indicated for Romania to opt for a rural development plan that is less dissipated than that under implementation, or even for a RD plan focusing primarily on competitiveness. It is necessary to increase **national responsibility for a correct option** and the success of application of specific measures at national level. **In conclusion, it is very important to establish an optimum ratio between the true needs of the rural sector and the accessibility of different measures: the new proposals of the Commission increased the responsibility of choice.** For Romania finding solutions to this aspect is even more difficult, as the national problems are more critical and more complex than in most other EU member states.

- **The conjugated evaluation of the implementation constraints** presupposes taking into consideration, for the future rural policy, the following aspects with regard to accessibility: eligibility conditions, intensity of Community intervention and intensity of institutional functionality. All these aspects finally determine the absorption of the EU funds. In the field of rural development, for Romania, the Community pressure was much higher than for the Old Member States, due to the lack of experience in rural development and institutional construction programming and management, in the first place. The relatively poor experience in the rural development policy implementation will represent a risk factor in the future as well, in relation to the effectiveness of the internal implementation of the rural development measures as it has been proved in the programming period 2007- 2013. The pressure of EU funds absorption was manifested throughout the implementation period, through the debates it entailed, yet at the same time it was a non-transparent process (absence of relevant figures). In Romania there was a real pressure for reaching the highest rates possible in the absorption of Community money, but this did not guarantee the effectiveness of the use of this money. In the selection of priorities, for the improvement of the attraction of EU funds for the development of countryside, Romania should focus on the administrative issue, where it has a competitive disadvantage compared to the older member states. Besides the poor experience in accessing the funds, the Romanian rural sector is also confronted with other problems, such as: deficient information, lack of project management experience as well as difficulties related to co-financing.
- **The evaluation of compatibility between the measures proposed at EU level and the real needs of rural Romania** is also a challenge. We must see whether the Community menu contains those measures that can contribute to the correction of rural problems and then to identify to what extent these measures can be applied under their current form. The rural development measures are different with regard to both the complexity of eligibility criteria and the intensity of Community intervention. Differences, nuances may appear between the member states – by specifying certain definitions or by establishing the value of support, and this may lead to different levels of accessibility of the measures from the menu. As a result, distinct elements may appear as an additional factor to the objective, manifest needs, increasing the difficulty of choice from the Community menu.
- **The accurate definition of the object of intervention and the establishment of the value of intervention** are as important as the establishment of priorities. In the new Commission proposal, the rural development policy is characterized by an increased flexibility, the member states having the possibility to exercise their own options within certain agreed limits. A diminution of the rural development menu under the aspect of measures in its componentry can be noticed. Considering the structural differences existing between the rural sector from Romania and from the EU-27, the **flexibility** could represent a key to a more efficient rural development policy.

6. Conclusions

Following the analysis of the rural development coordinates, it can be estimated that the entire rural area (predominantly rural areas and intermediate rural areas) is a territory that should become the object of the focus of rural development policies to a larger extent. At present, Romania has a rural area in which structures defining a complex and extremely various rurality are in place.

Out of this reason, any type of development/modernization should be based on the specificity of rural areas, on those defining phenomena and processes for each area in part.

Taking into consideration the situation of the Romanian rural area, the incipient experience in the implementation of the European programs as well as the commission's proposal on the support to rural development through the European Agricultural Fund for Rural Development (EAFRD) after 2013, which presents many novelty issues in the process of development and implementation of the post-2013

rural development policies, a special focus should be laid to the next national program for rural development.

7. References

- Centrul Român de Politici Europene (2009), *România și reforma Politicii Agricole a Uniunii Europene*, Policy Memo nr. 4.
- Commission Européenne, *Le plan Mansholt*, 1968, p.32.
- Commission Communication to the Council, European Parliament, European Economic and Social Committee and the Committee of the Regions, Brussels, 18.11.2010
- Communication from the Commission to the Council and the European Parliament, EC, COM (2007) 642 final, *Progress on the Sustainable development Strategy 2000*, Brussels.
- Dess, A., (2011), *Report the CAP towards 2020: meeting the food, natural resources and territorial challenges of the future*, European Parliament, Committee on Agriculture and Rural Development
- Drăgan, G., (2005), *Uniunea Europeană între federalism și interguvernamentalism. Politici comune ale UE*, Editura ASE, Bucuresti, Cap. V
- European Commission, (2011), *Propunere de regulament al Parlamentului European și al Consiliului privind sprijinul pentru dezvoltare rurală acordat din fondul european pentru agricultură și dezvoltare rurală (FEADR)*, COM (2011) 627final, Bruxelles.
- Istudor, N.,(2006). *Dezvoltarea rurală și regional*. Editura ASE, București
- Mantino, F., (2010), *The Reform of EU Rural Development Policy and the Challenges Ahead* , Notre Europe, www.notre-europe.eu.
- Pruteanu, E. M., Furdui, L. M., Serbu, V. M., Matoschi (Campan) O., (2011), *The future of subsistence agriculture under the influence of cooperative structures*, Ecological Performance in a competitive economy, Supplement of Quality – Access to Success, ASE, 11-12 noiembrie 2011, vol. II, nr. 125, pag. 191-196, 2011, ISSN 1582-2559
- Toma, E., (2006). *Agricultura României în procesul de integrare europeană*. ARS Academica, București
- Zahiu, L. și colab, (2005), *Politici și piețe agricole – reformă și integrare europeană*, Editura Ceres.

CURRENT ISSUES OF FISCAL CONTROL IN ROMANIA**POP Ioan***Ph. D. Assistant professor, Faculty of Economics and Business Administration, Babeş-Bolyai University, Cluj-Napoca, Romania, ioanpop1960@hotmail.ro***MOLNAR Andra***Ph. D. Student, Faculty of Economics and Business Administration, Babeş-Bolyai University, Cluj-Napoca, Romania, andra.molnar@yahoo.com***GABAN Lucian***Ph. D. Assistant professor, Faculty of Economics and Business Administration, Babeş-Bolyai University, Cluj-Napoca, Romania, luciangan1971@hotmail.ro*

Abstract. *The main task of any tax administration is to collect the correct amount of taxes payable to the budget, with minimum costs for both government and taxpayers. Achieving this goal is possible only when there is an efficient and effective tax administration, which is based on the procedures established and consistent management of each function. That is why the current paper addresses issues regarding the improvement of fiscal control in Romania.*

Keywords: control, tax, taxes, taxation, personal income tax

JEL classification: H 29, H 39

1. Introduction

Tax administration is a very broad, including all actions taken to implement the tax laws, since its approval, and must ensure implementation and compliance by all tax payers. In the past fiscal control was focused mainly on attracting additional funds from the state budget, and are therefore perceived by taxpayers as a coercive means, the state used it against them. In these conditions emphasized the quantitative side control and less on the quality.

In recent years, all tax administrations in developed countries economically changed their approach to this problem. Now administration tax and taxpayers are the positions of "business partners", taxpayers are viewed as "customers" of government. In these conditions, the goal of any modern administration became a fullest realization of voluntary tax compliance of taxpayers. Means income, we focus on the qualitative side of fiscal control, the role of education to taxpayers. Fiscal control activities, information and education with taxpayers is one of the main tools used by management for improving voluntary tax compliance.

To fulfill this role, tax audit should be conducted based on procedures that ensure consistent and effective framework for the rights and obligations arising during the control of both taxpayers and tax inspectors.

2. Method and results

A basic rule provides that the tax administration must be made equal taxation of all taxpayers, their equal treatment in terms of tax.

To achieve this objective, would be ideal to be sure all taxpayers, because government may ensure that everyone pays the correct amount of taxes due.

However, this goal is possible only in theory, as no country in the world has human and material resources in the tax that would allow it to control all taxpayers. It is therefore necessary that tax administrations have a selective approach to the taxpayers who will be exercising fiscal control.

In Romania the development of the declarative and impressive growth in the number of taxpayers and tax authorities need to adapt to these new realities have required taking measures to improve the efficiency of administration and, mainly, of the tax audit.

In this respect, it was considered one of the first steps towards streamlining and modernizing the tax audit activity is to develop a procedure for selecting taxpayers will be subject to tax and fiscal control programming.

Order selection is to determine the points where control will work, the segments of non-compliance, resource allocation to maximize revenue raised.

Shift in emphasis is needed on the quantitative side of fiscal control, ie control of all taxpayers at least once during the period of limitation on the quality, motivated control is performed on high-risk areas of the evasion and tax fraud.

Selection procedure and existing programming based on the following principles:

- Developing a central level guidelines by establishing priority selection criteria and procedure for the preparation of work programs, while the ranking of these criteria, and even establish new criteria to be made locally to adapt control conditions and network of contributors and available resources, using and stimulating local initiative and responsibility;
- Adapting programs to the size and scope of taxpayers, in order to improve control, knowing that these two factors depends, first, the complexity of control;
- Control programs will be produced annually, broken down by quarters and months. Allocation of local inspectors decides the complexity of control, the number and experience of inspectors.
- With regard to selection criteria, these include:
- Material criteria: the results of previous checks, signs of evasion, etc.;
- Fiscal criteria related to specific regulations of tax law: filing tax returns, pay tax liabilities, claims for reimbursement, etc.;
- Criteria for equality before the law: to provide a percentage of randomly selected taxpayers to achieve control of all industries, covering all geographical areas.

Selection process for taxpayers and tax control programming from businesses is, at the time of its preparation, a step in the modernization of fiscal control in Romania.

With the modernization of tax administration, the widespread use of computers could be used modern and efficient methods for selecting taxpayers, practiced in most European countries with much better results than ours in against evasion and tax fraud.

Risk assessment method

Risk assessment should be almost imperiously, as resources are not unlimited, and the risk of tax evasion is always present. Therefore, there is a need to assess risk for rational allocation of human and material resources. Also, tax risk assessment enables staff to obtain best results. This is achieved through a systematic decision-making and a problem of analytic analysis.

Risk assessment can be done in a cycle, which could include some major steps:

- Risk identification;
- Risk assessment;
- Decision on appropriate measures to eliminate risks;
- Evaluation and control;
- Performance measurement control;
- Review the previous decision in light of the results.

Risk Identification

This step identifies the downside risk, which must be properly administered. Activities in this stage are:

- Description of the tax system;
- Identifying participants in this system: "customers" - taxpayers and "shareholders" - the state tax;
- Describe the strengths of the system;
- Description of system weaknesses;
- Identify where, when and how the risk is likely to occur evasion and tax fraud and the category of taxpayers;
- To find information in the system;
- Description of responsibilities in the system.

Risk assessment

This step involves making a detailed analysis of the risks identified in the previous step, involving the following activities:

- Identify procedures that can use a person or company to avoid paying taxes;
- Identifying the circumstances in which the system is vulnerable;

- Identify possible changes in the system to minimize its vulnerability;
- Description of how the taxpayer can use changes in the system for themselves;
- Identify priorities risk: very high, high, medium, low, very low.

Decision

Once risks have been identified it is necessary to decide on the best techniques to eliminate the risks. The solution must be appropriate risk assessment risk level identified by analysis. The activities involved in this stage are:

- Identify processes available or required to cover risk exposure;
- Identify options and recommended solutions;
- Description of staff resources and technical funds necessary for implementation.

EvaluationandControl

Once the measures decided in risk assessment are implemented, it is important to have an ongoing program for monitoring and evaluating the effectiveness of management decisions. This step could involve the following activities on out come evaluation application decision-if this was achieved the desired resultand whether it covered the identified risk effectively.

Performance measurement

This element of the cycle identifies performance indicators to monitor the "health" system implemented. If the tax systemis based on information technology, it is desirable that the same indicators to be integrated into computer system design. An example of risk assessment approach could be the classification of tax payers into categories depending on their financial and tax and fiscal behavior in the past was as follows:

Table 1: Risk assessmentaccording to theclassification oftaxpayers

The importance oftax Behavior recentfiscal	Low	Average	High	Huge
unknown	Low	Average	High	Huge
unsatisfactory	Low	High	Huge	Huge
reasonable	Very Low	Average	High	High
satisfactory	Very Low	Very Low	Low	Average
verygood	Very Low	Very Low	Very Low	Very Low

Source: Own calculus

Another method for selecting taxpayers could be an approach where multiple categories are selected from those taxpayers who have no intention of tax evasion by those who have a high frequency of committing acts of fraud and tax evasion.

- Zone 1 - taxpayers who comply and not intentional evasion.
- Zone 2 - Taxpayers, who comply, but have no intention to comply or to avoid paying taxes.
- Zone 3 - taxpayers who fail to comply, but intend to comply with or to avoid paying taxes.
- Zone 4 - taxpayers who fail to comply or avoid paying taxes.
- Zone 5 - taxpayers who commit fraud.

Based on this "line tax compliance of taxpayers' selection of taxpayers it should be designed to provide frequent checks in areas 5 and 4. Also be allocated resources and to verify zone 3, as they contribute, without intent to avoid tax liability does not comply with their obligations, which may occur due to lack of knowledge of taxation or unintended errors to be corrected. However, to overcome compliance issues raised by this category of taxpayers should be promoted and other instruments, in addition to fiscal control, since there are more effective ways to educate taxpayers in this area.

However, it is necessary to allocate resources for Zone 2 and Zone 1 this allocation to be made in a lesser extent and longer periods.

In conclusion, it is advisable to select taxpayers to be done scientifically, based on analysis, not random, especially to reduce the risk of selecting taxpayers of Zones 1 and 2 mainly. In this case, the

result of the checks could be lower than the cost involved for tax and could lead to erroneous conclusions and inefficient use of resources.

At the same time would be better if it combines selection based on compliance with criteria areas such as economic importance to taxpayers, since it is very difficult to control include the areas of non compliance by all taxpayers.

Automatic selection method

Before an administration to propose to select taxpayers for control it must ensure that all necessary data is available to perform this operation. The entire selection process depends on the accuracy of the data of the Administration. The data used can be obtained:

- From taxpayers, tax declarations and other documents on which they are required to submit to tax authorities;
- From the activity of tax administration, control of documents prepared at taxpayer checks carried out on similar taxpayers or business partners of the taxpayer;
- From third parties, such as customs and other government entities, banks, etc.

Fiscal control limits

In most developed countries the tax system is based on "declaration". Under this system each taxpayer is free to declare his own income and therefore pay estimated tax, at least in the first instance. This mechanism, the liberal, necessarily involves a counterweight represented by "control". For this control to be effective, the legislature has to fit with certain constraints, and all warranties, both state and the taxpayers.

Dr. Francis Querol in "Le fiscal controls", Universite de Toulouse I, 1999, said that "fiscal control, like the god Janus, is a reality with two faces: the administration has important powers enabling him to stop or correct tax irregularities, the taxpayer prepares verification, and can cooperate with the administration rights to oppose the administration of safe and effective. Balance is not perfect, but still acceptable. If one tries to avoid fraudulent accounting, tax obligations specifically identified, or if they neglect to give their checking operations, he has much, if not everything to lose. The price paid to ensure the supremacy of state tax sovereignty. "

Recent changes of specific legislation, certain elements of modernity (the Western) began to make its presence felt in Romanian fiscal system, including the rights and obligations of taxpayers. Thus, by Order 713 of October 12, 2004, President National Tax Administration Agency approved "book rights and obligations of taxpayers during the tax audit."

Romanian fiscal system based on self-taxation, taxpayers are required to declare and pay taxes and social contributions it owes the general government.

Tax audit, as part of the tax statements, verification tasks is tax bases; tax returns are legal and compliance, the correctness and accuracy obligations by taxpayers, the tax and accounting compliance with the legislation and to establish differences liabilities and related accessories. Taxpayer during the tax audit has rights and obligations guaranteed by legal regulations.

Economic results of tax inspection last period have increased effectiveness of verification, from developing better control programs based on risk analysis and ending with increased quality control documents, thus initiating a chain of quality true to the whole process. Measures taken in 2011:

- Tax audit actions aimed, primarily taxpayers with potential fraud and tax evasion high, selected based on risk analysis;
- Real estate developers - individuals who had the obligation to register as VAT payers;
- Areas that have experienced losses in years of economic growth (in construction companies, companies involved in intra-Community transactions, etc.);
- VAT reporting companies recovered and have not requested reimbursement;
- Companies have made deals with companies in fiscal inactivity and / or insolvency.

Priority target areas and the results of checking the legal persons were as follows: service activities related to extraction of crude petroleum and natural gas, non-specialized wholesale of food, beverages and tobacco Wholesale of fruit and vegetables trade Wholesale of grain, seed, feed and raw tobacco, construction of residential and nonresidential buildings, specialized wholesale, intermediation in the sale of miscellaneous intermediation in the sale of fuels, minerals and chemicals for industry, wholesale trade other products.

Table 2: Tax audit activity in 2010 and 2011

Indicator	2009	2010	Rhythm 2010/2009 (%)
Number of checks to taxpayers	116.973	112.170	-4,1
• at firms	97.077	83.010	-14,5
• at persons	19.896	29.160	46,6
Additional obligations set	4.587,0	6.082,0	32,6
Reduction of tax loss (mil. lei)	*	1.519,9	*
Precautionary measures (mil. lei)	618,0	1.948,1	215,2
Confiscation (mil. Lei)	36,0	96,9	169,2
Fines (mil. Lei)	64,0	43,2	932,5

* Information indispensable

Source: <http://www.anaf.ro/public/wps/portal/ANAF>

In 2011, business tax audit showed good results: 112,170 checks were made to corporate taxpayers and individuals, of which 83,010 (74%) the legal handful (compared to 97,077 in 2010), and additional requirements have been established amounting to 6082.0 million lei (32.6% more than in 2010). Tax loss was reduced by the amount of 1519.9 million

Precautionary measures were ordered for the amount of 1948.1 million lei (618 million lei in 2010).

A significant share of the total additional tax liabilities has attracted a value added tax - about 60% (3644.6 million) and income tax - about 27% (1631.7 million).

Figure 1: Number of checks to taxpayers Legal

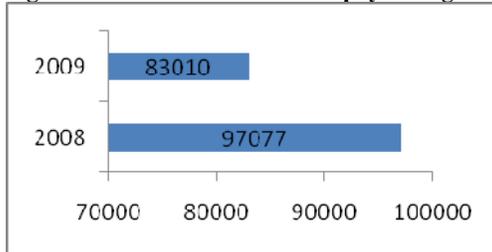
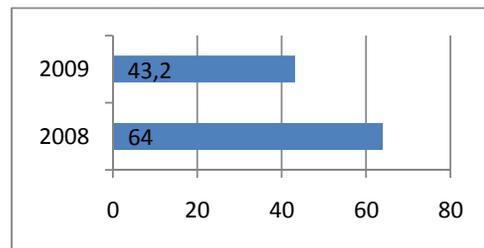


Figure 2: fines

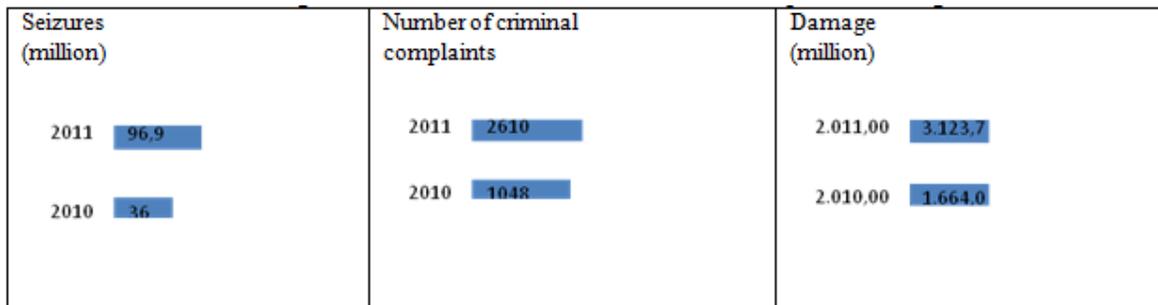


(million)

Source: <http://www.anaf.ro/public/wps/portal/ANAF>

However, tax auditors and amounts confiscated goods totaling 96.9 million, compared to 36.0 million in 2010. In addition, deficiencies were applied fines totaling 43.2 million and were submitted to competent bodies for further investigation a total of 2,610 criminal complaints injury 3123.7 million lei, which is increased activity to combat tax evasion by over 100% since 2010. In 2011, the amounts of the disputed documents and admitted or termination was 120.0 million lei (98.5% of companies), representing 2% of the total additional requirements established.

Figure 3: Confiscation, number of criminal complaints, Damage



Source: <http://www.anaf.ro/public/wps/portal/ANAF>

Financial control device, in 2011, has taken action to audit a number of operators 7680, which was drawn from a total of 10,402 acts of control. Results of control have resulted in establishing differences

in the general government, totaling 3828.3 million lei. Have been applied a number of 881 fines, amounting to 1.9 million.

3. Conclusions

From the above, we draw some conclusions on the improvement of fiscal control, namely:

- creating an organizational framework outlining the duties and responsibilities of the audit;
- Tax laws as complete, simple and flexible;
- Skilled and motivated;
- Staff remuneration depending on the social importance of their work, and not directly proportional to the fines, but to be punished for misbehavior;
- A system interconnected between all public institutions, enabling quick access to taxpayers' tax information.

Improving tax audit of four countries should aim to reduce the loss of government revenue generated by tax evasion behavior of individuals and businesses. This requires the organization to act on fiscal control structures, the procedures for tax registration, the program planning and control strategy, and specialized personnel in control of taxation. We believe that all measures taken so far on the ways forward to improve financial and fiscal control were not sufficient, competent bodies in the field have not been successful.

4. References

- Allais, M. (1989) *L'import sur le capital et la réforme monétaire*. Hermann Editeurs des Sciences et des Arts, Paris.
- Androniceanu, A. (1999) *Management public*. Editura Economică București.
- Bistriceanu, Gh.D., Demetrescu, C.G., Macovei, E.I (1981) *Lexicon de finanțe-credit, contabilitate și informatică financiar-contabilă*, Editura Didactică și pedagogică, București.
- Bogdan, I. (1995) *Strategii de control*. Editura Nemira, București.
- Bostan, I. (2003) *Controlul fiscal*. Editura Polirom, Iași.
- Boulescu, M., Ghița, M. (2001) *Expertiza contabilă și audit financiar contabil*. Editura Didactică și Pedagogică, București.
- Crăciun, Ș. (1996) *Controlul și auditul financiar. Expertiza contabilă*. Editura Economică București.
- Florea, I. (1986) *Controlul financiar și expertizele contabile*, ediția a II-a, Iași.
- Martinez, J.C. (1990) *La fraude fiscal*. Editura Pief, Paris.
- Opreșcu, M. (1999) *Fiscalitate și contabilitate*. Editura Universitaria, Craiova.
- Queral, FR. (1999) *Le control fiscal*. Université de Toulouse.
- Tulai, C. (2003) *Finanțele Publice și fiscalitatea*. Editura Casa Cărții de Știință, Cluj-Napoca.
- Tulai, C., Șerbu, S. (2005) *Fiscalitate comparată și armonizări fiscale*. Editura Casa Cărții de Știință, Cluj-Napoca.
- Văcărel, I. (1991) *Finanțele publice, teorie și practică*. Editura Științifică și Enciclopedică, București.

SELECTED ASPECTS OVER A STUDY ON FINANCING ASSETS USING FINANCIAL LEASING IN SIBIU COUNTY

POPA Daniela

Ph. D. Assistant professor, Faculty of Economic Sciences, Department Finance and Accounting, Romanian German University, Sibiu, Romania, daniela.popa@roger-univ.ro

HALMI Mirela

Ph.D., Postdoctoral Studies, Romanian Academy, Bucharest, Romania, mirelhami@yahoo.com

Abstract: *The financial leasing is a special form of financing with major advantages, but if it is not used properly or if it is used only to finance vehicles, its full potential shall not be used. We are making this statement because, from the presented research and analysis, a spectacular efficiency in using leasing has not yet resulted.*

So we did a research applied for 86 companies located in Sibiu County and financed through leasing. We want to find if the users know the advantages, to identify their financing resources at the lowest costs and to collect the perception's users regarding some variables in leasing contracts.

Key words: financial leasing, investment, financial resources, bank loans.

JEL classification: G 32

1. Introduction

Nowadays, the financial leasing, due to the increase of the economic competition in all fields of activity, by the advantages it offers, has become a type of financing favored by more and more commercial companies. The increasing need to be updated to the modernization of industrial equipment and technology, has generated the enterprises' desire to modernize their technique, without diminishing the cash flows by consistent cash outflows. The financial leasing, through its characteristics, provides beneficiaries with the necessary object, without suddenly reducing their liquidity, provides safety and a comprehensive package of special services (maintenance, service, insurance). It provides a type of financing which protects the turnover and relieves the company from the liquidity risk, the financial leasing therefore representing an extremely important operation.

Ever since the beginning, the purpose and issues of our study have been very clear to us: *the insufficient knowledge of the financing possibilities offered to its users, the necessity to determine the efficiency of using the financing resources generated by this activity.* We have established that these aspects regarding the research should be analyzed in terms of the main participants to the operation: *the leasing beneficiary.* Based on this, we formulated the purpose of the research, which, to us, was to identify the financing resources, and also to determine the efficiency of the leasing resources for the user.

We limited the study only to the financial leasing, because, in our opinion, the operational leasing, on one hand, is nothing but an insignificant percentage in the total leasing market in Romania, and on the other hand, as a result of new legal stipulations, this is no longer perceived as a financial operation, but as a rental activity. Therefore, when we talk about leasing throughout the paper, we shall refer to the financial leasing.

In order to achieve our goal, we have considered the following **objectives**:

1. Identifying, the financing resources for the development of the financial leasing, at the lowest costs;
2. The analysis of the financial leasing activity in Sibiu county and of the perception of this financing activity by the financing beneficiaries;

2. Case study information and selected sample

In our case study we introduced a representative sample from the number of companies financed through leasing. To establish an adequate base we used data from Statistic Registry, Chamber of Commerce and Finance Agency site. In our study we proceed as follows:

- First we define sample base, formed by companies financed through leasing in 2005-2010.
- Some leasing companies were offered a clients list from which we selected 139.
- From this base we eliminate all non active companies or had breaking of activity in 2005/2010. The rest of 86 companies were included in our final sample.

In our study for a reliability degree of 95% and an error margin of 10%, the sample is:

$$n = \frac{1,96^2 \times 0,5 \times (1 - 0,5)}{0,1^2} = 96 \quad (1)$$

So the lowest number of companies should be 96. Keeping the reliability degree of 95% and our data were collected only from 86 companies, **the utmost error margin** ($\Delta_{\omega_{\max}}$) is:

$$\Delta_{\omega_{\max}} = t \sqrt{\frac{p \times (1 - p)}{n}} = 1,96 \sqrt{\frac{0,5(1 - 0,5)}{86}} = 10,56\% \quad (2)$$

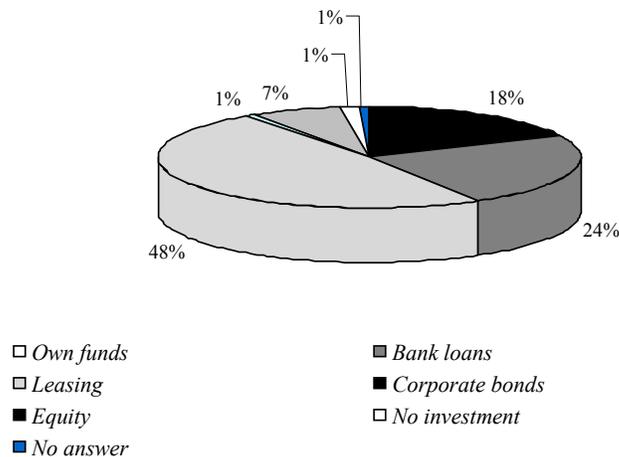
In establishing the size of our sample we fought with some limitation and restriction:

- Accounting information for 2011 was available very late, and we could not use it.
- From the sample were excluded some users, such as private persons, because we cannot analyze them from lack of information.
- The greatest limitation is the size of the sample (only 86 companies) and the high error margin (10,56%) for a degree of trust of 95%. A bigger sample had surely increased the study's relevancy. But the restrictions were determined by the objectives (attained, even with the lowest degree of precision) and the cost reasons. Still we would like to emphasize that our research will be broadened, these results considered to be a starting point.

3. Research results of applied study

Economic and financial practice proved that for medium and small business (Popa D. 2007), leasing became a preferred method of financing. Our analysis is realized between 2005-2011. **Figure 1** reveals preferences for this financing method (48%), followed by banking debt (24%) and owner's equity (18%).

Figure 1: Financing investment methods in analyzed local companies, 2005 - 2011



These figures are generated by the Romanian banks attitude that small and medium firms financing is not a strategic concept. The expensive bank loan coerced medium size companies to look for new financing techniques, such as financial leasing.

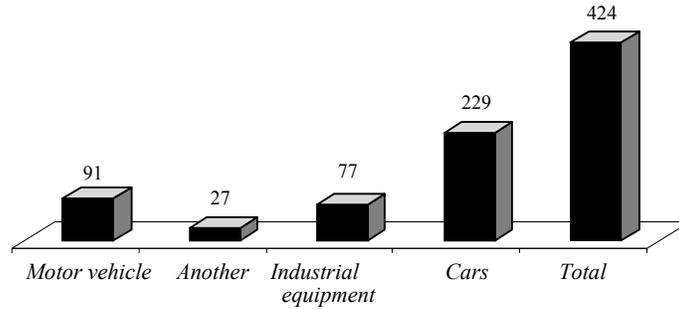
In Romanian law is regulated the goods that can form the object for the leasing contract (OUG 51/1997) and they are:

- Fixed assets through nature or which became such through use and non fixed assets used in civil circuit (exceptions are audio and video recordings and such non corporal assets);
- Wrights of using computer programs (as an exception to the general rule).

Juridical literature (Gheorghiu Gh., Vrabie B. 2006) expressed the idea that „through proposed mechanism issued by law will lower fraud and will insure legal use for software for producers and users”. Object for leasing contract could be an existent asset or a future one, produced and delivered by seller. While through leasing contract is insured only the right to use, it is not compulsory for the leasing company to be the owner of the asset in the moment of signing the contract.

Figure 2 shows companies preference to some leasing financed objects: from 424 contracts analyzed the majority are for cars (54,1%), followed by another means of transportation (trucks, trailers) in 21,46%, industrial equipment (18,16%) and other objects (6,37%).

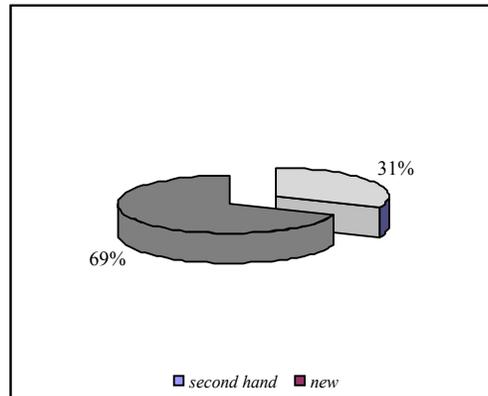
Figure 2: Structure of leasing contracts in 2005 – 2011, (number of contracts)



We consider that this cars leasing market was excessively exploited, one reason being the age of automotive park and the necessity of being replaced and another reason being the leasing acquisition of cars for personal use and so the deductibility of VAT and so the deduction of price list for their cars (until the apparition of OUG 34/2009, which modify Fiscal Code). In our opinion, this method of circumvention for VAT payment is now seriously blocked by the law modifications, which bring a major diminishing in leasing market.

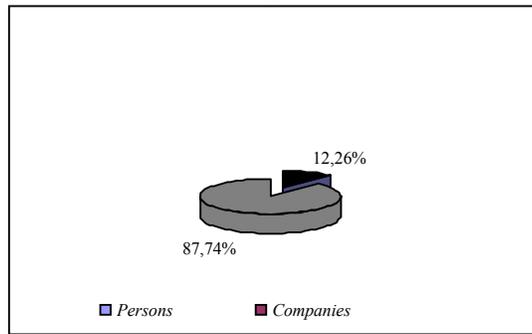
Regarding the acquisition type most part are new (smaller than national average: 2010 was 80%, 2011 was 85%) and we could argue that local companies agree to finance old equipment because of cost for new ones.

Figure 3: Acquisition type (%)



The leesee can be anyone who decides to finance through leasing. From analysing 424 contracts between 2004-2010, the users are represented in **Figure 4**. The biggest preponderance (87,74%) is attributed to companies, the rest are for individuals. Motivation for that fact are generated by lesser acquaintance of this method by the public. The preoccupation for satisfying the needs of this category of clients is no stimulative, while the value of the contract and the certainty of collecting is bigger for companies. Now is the time for Romanian leasing companies to aknowledge their financial services to the public and to increase their sales and profitability.

Figure 4: Structure of leasing contracts in 2005 – 2011 (%)



In 2011 the value of financing was 1349 million euros (growing from 1121 million euro in 2010, with 20%). Leasing companies are now on a downward slope in sales and must make great efforts to attract new clients (nor firms) wishing not to pay for environment tax for old cars and to consider thus a solution. As Romanian banks do lately, an aggressive publicity for their products to make their products more acknowledged and to increase public knowledge for their financial services.

In our analyze we ascertain that most of responders believe that cost is the most important criteria for selecting leasing, as shown in *figure 5*.

70% of responders choose cost criteria and 30% believe quality criteria. Theoretically chosen criteria could be separated in two categories: cost and quality. Cost criteria are shown in *Table 1*. The biggest importance is given for aquirement cost (200 points), followed by financing costs, fiscality and residual value.

Figure 5: Criteria for selecting leasing financing (%)

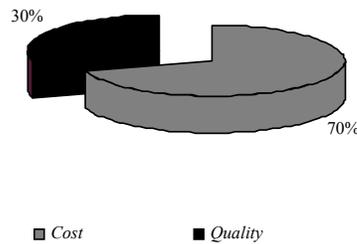


Table 1: Cost motivation in selecting leasing contracts (points)

Motivation by costs	5	4	3	2	1	Total
Acquisition cost	21	19	5	2		200
Financial cost	11	5	2			81
Taxation	5	3	1	1	1	43
Residual value	3	2	1	1	1	29
Total	40	29	9	4	2	353

Source: Own research

In order to choose one must know the quality criteria, such as liquidity, risk, flexibility, services offered

Table 2: Quality motivation in selecting leasing contracts (points)

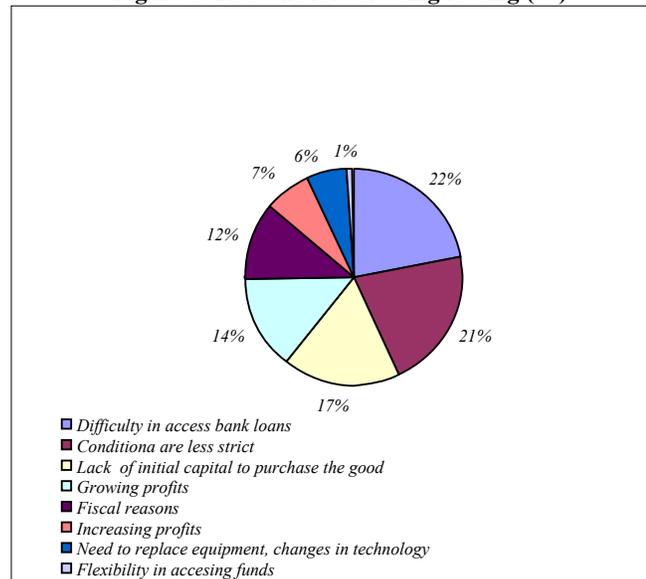
Motivation by quality	5	4	3	2	1	Total
Liquidity	15	12	5	2		142
Financial or investment risk	6	7	4	3	3	70
Flexibility (duration)	6	5	1	1	1	56
Other: consultancy, services, maintenance	3	4	2	2	2	43
Total	30	28	12	8	6	311

Source: Own research

with a great impact in selection. Our inquiry forecast these aspects and the results are represented in **Table 2**. The most important criteria is liquidity (142 points), followed by risk, contract duration; the least is offered services. Total points aquired are only 311, less then cost criteria as we already seen in **Figure 4**.

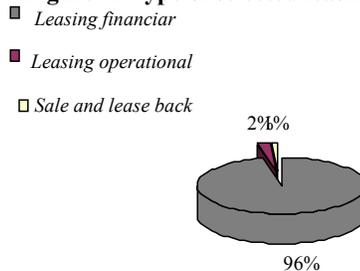
From reasons in choosing financial leasing, the companies choose the most important being the impossibility of obtaining and hard conditions for a bank loan (44%); lack of capital for acquisition (17%); and other reasons as seen in **Figure 6**.

Figure 6: Reasons for selecting leasing (%)



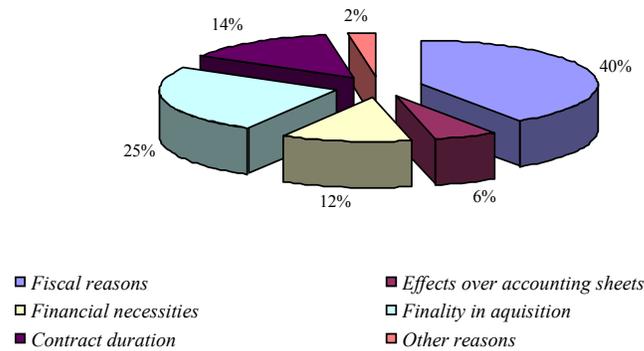
So it is obvious that leasing is an important alternative for bank loan. The reason for selecting one type of leasing contract are represented in **Figure 7**.

Figure 7: Type of selected leasing contract (%)



Most contracts are closed for financial leasing (96%) followed by operational leasing (2%). Reasons and their importance in the selection of contract type, are shown in Figure8.

Figure 8: Reasons for selecting leasing contract form (%)



First reason for selection is fiscal (interest and rates are fiscal deductive, 40%) and in increasing this method of financing the legal authorities could improve legislation. Among other reasons chosen is finality in acquisition (25%), which only financial leasing could offer. In third place are financial necessities (12%) and contract duration (14%). To verify that each motif was scored (from 1/least to 5/most); the results are shown in **table 3**.

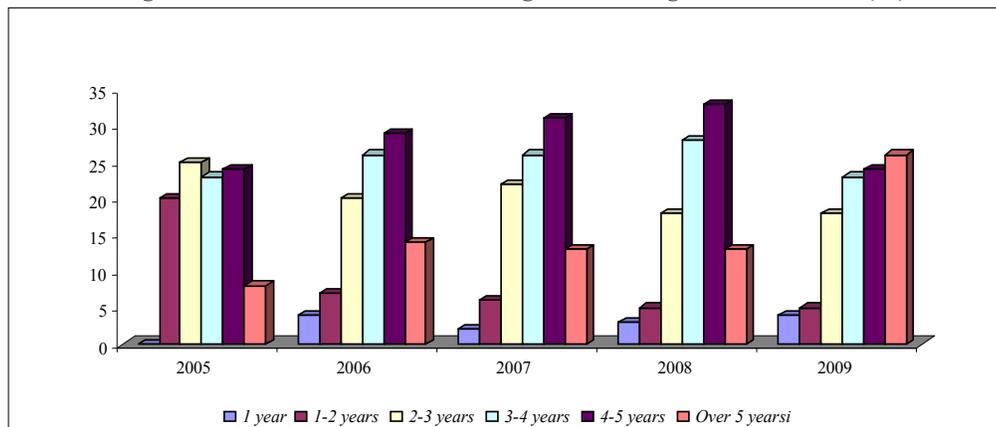
Table 3: Reasons for selecting contract form (points)

Reasons for selecting contract form	5	4	3	2	1	Total
Fiscal reasons	20	11	3			153
Financial necessities		5	5			35
Contract duration	5	4	2	3		47
Effects on accounting sheets			2	2	1	11
Finality in acquisition	9	6	6			87
Total	34	26	18	5	1	333

Source: Own research

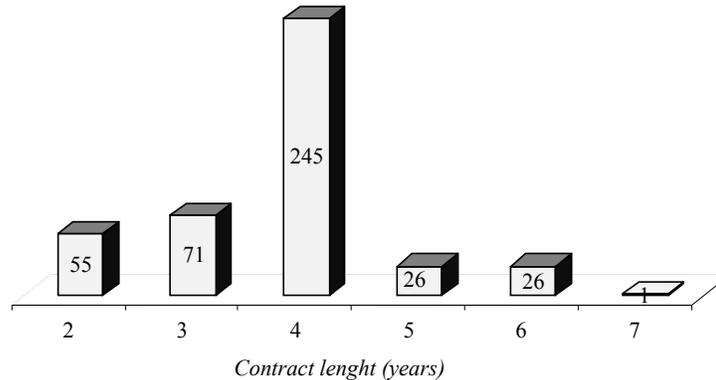
The utmost reason is fiscal (153 points), followed by acquisition (87 points). Duration scores 47 points and financial necessities only 35 points. From user point of view the most important criteria is the fiscal one. In Romania leasing contract duration is established by law between one and seven years. To classify a contract as a financial one, leasing period must overcome 80% from normal use duration for the asset. Most contracts in Romania are concluded for three years, but lately that period has increased to four or five years as we can observe in **figure 9**. This augmentation is sustained by user's option to face a smaller monthly financial effort, even if entire leasing cost increases and by neediness for correlation between contract duration and depreciation and life usefulness of the asset.

Figure 9: Evolution of financial leasing contract length in 2005 – 2009 (%)



These affirmations are verified in **figure 10** where the biggest number of contract are issued for four years (58%) followed by three years contracts (17%). In Sibiu County is the same trend as the national most of the contracts are made for less than five years.

Figure 10: The number of lessees / contract length in 2005 - 2010



By Romanian law, financial leasing contract could be concluded for at least one year. There is no clear demand that the contract should be written, but present law regulate the compulsory stipulations and so the written form is understood. In our research we concluded that financing period in leasing is no more than seven years. Reasons and considerations for this restraint are simple: greater risk for financing on long term, lower financing for Romanian leasing companies, which could be developed in last years only through financial sustention of banks, lack of control for debtors, the impossibility to refinance long term leasing contracts through capital market. Starting with these premises, we saw that long term leasing has increased his weighting in all the financed offered by leasing companies even to a double value since 2009 (**Table 4**).

Table 4: Medium duration for leasing contracts between 2005-2010 (%)

Years	2005	2006	2007	2008	2009	2010	2011
1	0	4	2	3	4	6	5
1-2	20	7	6	5	5	10	9
2-3	25	20	22	18	18	21	21
3-4	23	26	26	28	23	22	22
4-5i	24	29	31	33	24	20	24
Over 5	8	14	13	13	26	21	19

Source: www.alb-leasing.ro

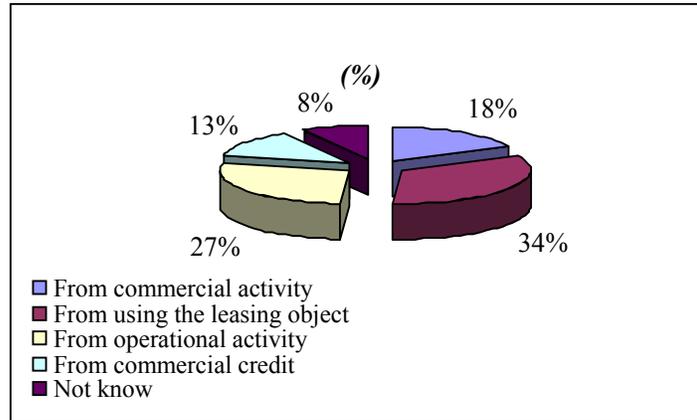
At the end of 2007, balance of over five years credit was 48,8 md. lei (14,5 md. euro) (Chiru L./2007) growing since 2006 with 99%. This evolution was made because individual clients and firms have headed more to longer date of payment. In following years the tendency is maintain and in 2009 represent 26% of total. In the case of firms, lately grow a demand for investment financing, on long periods. While banks had to adapt to stronger regulation regarding debt degree, increased date of payment for more than 10 years (for classical credit) and even to 30-35 years for mortgages.

Financing resources for leasing payments are structured in own resources and borrowed. The first being not sufficient and that other methods of financing is not possible, companies will search for leasing as a last resource financing. We intend to determine leasing user's perception in covering the leasing rates. Main goal was to disclose the modality of payment from the surplus of use the assets bought in leasing. The result is seen in **figure 11**.

34% of companies prefer to finance leasing payment from using the asset acquired. Another 27% finance that by operational activity and both categories comply with the essential principle in finance that all the long term assets should be financed through long term debt. The rest believe that they would pay the leasing rate from commercial activity (18%), or from commercial credit (13%), and 8% not know and

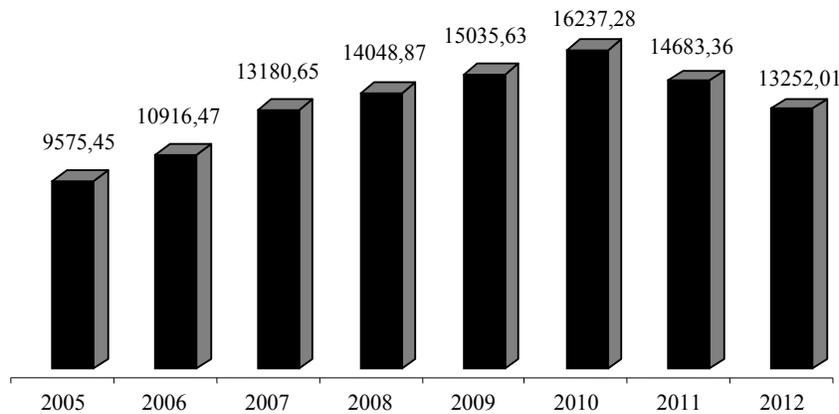
their decision to financing in leasing was made without a planned decision. The answer is surprising while more than 39% of the companies do not know or wrongly presume that the payments will be made from sources not intended for this kind of debt.

Figure 11: Means of financing leasing payments (%)



Medium value of the leasing contracts analyses is based on studying growth or decrease tendency on national scale. In appreciation of quality dynamics of leasing, one important indicator is the value of concluded contracts, as an indicator to the interest of clients for this financial form. But this analysis is difficult to realize while each leasing company knows its contracts value and at national scale there is no statistics regarding the number of concluded contracts. In order to made such an analysis possible we use data provided by one of local leasing firm, which graciously we thank. Practically this indicator will prove the evolution tendency for the analyzed period, as seen in figure 11.

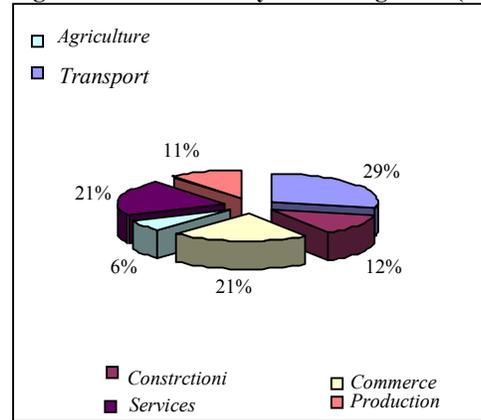
Figure 11: Medium value of leasing contracts 2005 – 2012 (Euro)



Medium value of financial leasing contracts has a growing tendency in 2005-2010 (concluded contracts between 2008 and 2010 positively influence this value), but future tendency is in constant decrease because the company has reduced importantly its activity due to the decline in its financial status.

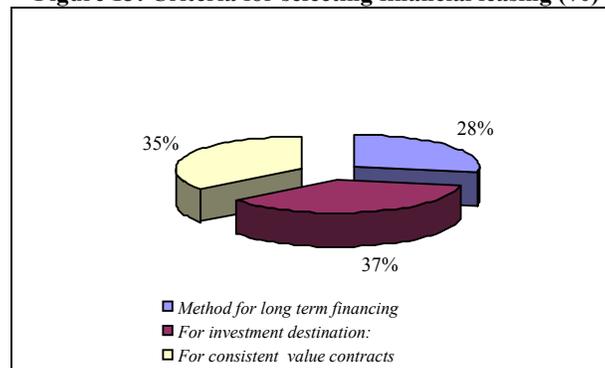
Another point of interest in our inquiry was to determine the activity for the users shown in figure 12. We see that 29% are transport companies and in fact this is the reason for such a big percent in automotive objects of leasing contracts in Sibiu County. 21% are firm which main activity are services (from maintenance and repair) and the other commerce.

Figure 12: Main activity for leasing users (%)



Why choose users one or another leasing company? This was a question asked for the 86 respondents in our study, and we conclude that selecting one leasing company is based on the following factors: financial offer (24%) or other services offered such as consultancy and assistance (12%). Another observation is that financier is selected based on history transaction (20%) or recommendation gave by business partners (14%) and mostly none based on sales or turnover (7%). We could conclude that users are aware of importance of choosing good in order to finance their project even if leasing companies were not putting until now an aggressive marketing for increase the sales. Finance capacity of leasing firm is important and came with the trust in this firm. These two motifs are the most important to the users while leasing contract is based on mutual trust. Financial criteria are also important and are linked with size of the firm and publicity, but not as first one. This could be an aspect worth analyzing because users are not very influenced by marketing measures. In **figure 13** is shown the importance given to leasing financing by the users, such as financing use (for investment 37%) contract value and duration (28%).

Figure 13: Criteria for selecting financial leasing (%)



An interesting question was the degree in which users calculate and analyze indicators such as: assets structure, fixed assets rate (24,5%), financial leasing value, the importance of the debt in accounting balance (34,5%), total assets efficiency (21,8%) and the rotate number for total assets (30,9%). The results are intriguing: the majority of the users do not calculate the impact of leasing debt or other efficiency indicator, probably because most of the contracts are concluded for autovehicles and cars (**figure 2**). And in majority of cases these indicator are based on concrete data regarding the effects induced by leasing acquisitions. Or the users do not know to compute such indicators or did not have the data to calculate them. Anyway the results are concerning and the enquiry had confirmed our expectations.

4. Conclusions

The financial leasing is a special form of financing with major advantages, but if it is not used sufficiently or if it is used only to finance vehicles, its full potential shall not be used. We are making this

statement because, from the presented analysis, *a spectacular efficiency has not yet resulted from using this financing resource within commercial companies in Sibiu district*. The values presented by the indicators offer a clear image of these companies' activity, in our opinion it is unlikely to generate substantial incomes needed for future development. The obtained results cover, in some cases, only the expenses and they generate only a symbolic profit for the owners. It looks like investors have little resources to invest, and still these capitals are not properly used.

Regarding users questioned we can conclude:

- Financial resources are composed from own capital and borrowed. Knowing that the first are scarce and financing through another method is not possible; users will appeal to leasing as the only one form of financing. Our analysis reveals preference for this financing method (48%), followed by banking debt (24%) and owner's equity (18%).
- As for object of contract, companies preferred cars (54,1%), another means of transportation (trucks, trailers) in 21,46%, industrial equipment (18,16%) and other objects (6,37%). We consider that leasing market was excessively exploited, one reason being the age of the automotive park and the necessity of being replaced and another reason being the leasing acquisition of cars for personal use and so the deductibility of VAT and so the deduction of price list for their value.
- Criteria for selecting a leasing contract: 70% of responders choose cost criteria and 30% select quality criteria. The most important criteria is liquidity, followed by risk, contract duration; the least is offered services. Reasons in choosing financial leasing, the companies choose as the most important the impossibility of obtaining a bank loan and hard conditions for a bank loan (44%).
- Selecting one form of leasing: first reason for selection is fiscal (40%) and so in increasing this method of financing the legal authorities could improve legislation. Among other reasons chosen is finality in acquisition (25%), which only financial leasing could offer. In third place are financial necessities (12%) and contract duration (14%).
- Contractual period is less than five years. Most contract are issued for four years (58%) followed by three years contracts (17%). In Sibiu County is the same trend as the national most of the contracts are made for less than five years.
- An interesting question was the degree in which users calculate and analyze indicators. The results are intriguing: the majority of the users do not calculate the impact of leasing debt or other efficiency indicators, probably because most of the contracts are concluded for autovehicles and cars. Or the users do not know to compute such indicators or did not have the data to calculate them. Anyway the results are concerning and the enquiry had confirmed our expectations.

As in any paper, at the end, we have drawn the final conclusion: the financial leasing is not used in Romania at its fair value. We believe – at least with regard to the financial leasing – that the experience of developed economies can be an example to be followed. Not accidentally, the economic growth of developed countries was mostly due to the encouragement of any type of leasing. Incentives, especially the fiscal ones, given to the leasing companies have led to the effervescence of the phenomenon, therefore developing a real industry. It must be well understood that eventually users shall benefit from any type of facility of the financial leasing. And the Romanian government shall also benefit from this. Unfortunately, in Romania, we cannot talk about a stimulating, legal and fiscal framework regarding the financial leasing; without exaggeration, we would like to suggest that changing this situation might be one of the ways of economical integration in the E.U.

5. Acknowledgements

This paper was supported by the project “Post-Doctoral studies in Economics: training programme for elite researchers –SPODE”, co-founded by European Social Fund through the Development of Human Resources Operational Programme 2007-2013, contract no. POSDRU/89/1.5/S/61755.

6. References

- Chiru L. (2007) in articolul *Finanțările pe termen lung s-au dublat într-un an* apărut în Ziarul Financiar nr. 2140/2007;

- Gheorghiu Gh., Vrabie B. (2006) *Forme ale contractelor de leasing*, în Revista de Drept Comercial, nr. 3/2006, p.25;
- Popa Daniela (2007) *Specific form of long term financing – Leasing*, în „Analele Universității din Oradea – Științe Economice”;
- Articolul „Ifn – urile au pierdut 27.000 de clienți anul trecut, stocul de credite a scăzut cu 17%”, apărut în Ziarul Financiar, 11.02.2011, http://revista.presei.ro/stire/ifnurile-au-pierdut-27000-de-clienti-anul-trecut-stocul-de-credite-a-scazut-cu-17_985580.aspx, accesat 11.02.2011;
- Ordonanța Guvernului nr. 51/1997, privind operațiunile de leasing și societățile de leasing, publicată în M. Of. Al României nr. 224/30.08.1997, republicată în M. Of. Al României nr. 9/12.01.2000, art. 1, alin 2.

CREATIVITY VERSUS ILLEGALITY WHEN OPTIMIZING A COMPANY'S FISCAL COST

POPA Mihaela

Ph.D. Student, Faculty of Economics and Business Administration, University of Craiova, Craiova, Romania, mipo_ro@yahoo.com

Abstract: *Effectively managing the economic and financial resources of any company means taking account of business fiscal level, too. Companies' concern is shifting from effective economic management to optimum fiscal management also known as fiscal optimization. It should be specified that managing taxes and fees in order to optimize them does not mean infringing the law. Correct and justified fiscal management can help prevent the inconveniences caused by tax evasion or fiscal frauds.*

Key words: fiscal optimization, creative accounting, accounting fraud, true and fair view

JEL classification: E 26, M 21, M 41

1. Introduction

Optimizing a company's fiscal cost can be carried out by remodelling fiscal outcomes by means of current and strategic decisions. The final purpose of fiscal optimization is reducing the fiscal cost in the context of observing the legal regulations in force.

Specialized literature brings forth the idea that a good administrator is the one working with a good accountant whose strengths are regarded from the perspective of his/her efforts to minimize an enterprise's fiscal cost. Yet, one should not ignore the fact that along with the implementation of IAS and IFRS, the skills of account managers are real if the latter achieve a minimum fiscal cost without affecting financial states' helpfulness and credibility both to investors and to the other categories of users.

Lowering an organization's fiscal cost can be accomplished by being well informed about the fiscal regulations in force and their close observation, especially by knowing the ways to increase profitability with the help of decisions made at fiscal level.

2. About fiscal optimization and creative accounting concepts

A fiscal cost's optimization means any activity performed within the legislation aiming at reducing tax duties by:

- Exempting, decreasing, delaying fiscal duties;
- Timely reclaiming fiscal outstanding debts or avoiding to detain fiscal outstanding debts thus allowing for lower funding costs of fiscal obligations;
- The chance to make up for the fiscal losses from subsequent fiscal outcomes;
- Capitalizing the fiscal legislation in order to reach maximum level of fiscal deductions and the fewest circumstances when fiscal deductions are not accepted;
- Developing/Performing taxable operations in areas where the tax level, fiscal costs and risks are the lowest.

Fiscal optimization is not the result of abuses in interpreting fiscal law or facts that contravene fiscal legislation.

Fiscal optimization solutions involve the interpretation of fiscal legislation usually according to lawmakers' interests, not by argumentations or interpretations of the law only in favour of taxpayers. Operations, transactions, taxable base, transaction subjects and other information related to fiscal optimization are transparently and properly detailed in all the mandatory accounting and fiscal reports of taxpayers.

Solutions choose the development/performance of taxable operations in areas where the tax level, fiscal costs and risks are the lowest as far as taxpayers are concerned. The legal reduction of payments in the form of taxes and fees is an effective tool to raise additional liquidities which can be capitalized or distributed as dividends to shareholders.

Using the facilities provided by fiscal legislation in a company's favour is normal. Adam Smith, the author of "Nations' Wealth", stated that "as long as people do not infringe the law, each of them is fully entitled to take care of their own incomes in a way that personally suits them", because searching

and implementing legal solutions to lessen the taxes and fees they must pay is a legitimate concern which should be accepted as such by any fiscal authority.

The term creative accounting was first introduced in the accounting field by the British researcher J. Argenti in 1973. He established a direct connection among creative accounting practices, managers' incompetences and business failures, and asserted that using creative accounting means a peculiarity that foretells a crisis. The richness of the literature that has brought this issue into discussion has generated the involvement and concern of numerous researchers in terms of creative accounting. Therefore, in professional and academic environments there is no general point of view related to the definition of creative accounting, as various authors aim at true attempts of showing a real picture of "financing outside balances" and "balance enrichment". The most argued upon points of view referring to creative accounting extents and limits were published in 1996 by Ph.D. Professor Nicolae Feleagă in his work "Accounting Controversies"; the main ideas of this work underlay the paper called "Creative Accounting" by Economics Ph.D. Liliana Malciu..

Creative accounting is one of the manipulative practices having been strongly enhanced in the financial field as time has passed. Although such a practice obeys the law, it deliberately misleads financial information users thus making up a false image of a company. Nowadays, creative accounting has become a complex, evolutive phenomenon with effects that worry in-field specialists.

Most researchers believe it is characterized by two aspects (Malciu, 1999, p. 16-17):

- the use of professional reasoning to solve issues that at least at present have no accounting normalizations;
- the financial engineering techniques are applied according to their incidence upon an enterprise's financial status and performance.

The dual, emphatic feature can lead to the most substantial definition supported by Naser (quoted by Feleaga and Malciu, 2002, p. 390). Therefore, creative accounting is:

- the process by which, since there are rule breaches, accounting figures are manipulated and, thanks to flexibility, assessment and information practices are selected which allow the transformation of financial circumstances from what they should be into what managers would like them to be;
- the process by which transactions are made up so that to allow the generation of the desired accounting outcome.

Malo and Giot (quoted by Malciu, 1999, p. 17) stated that creative accounting is originally virtuous and provides general accounting with means to enable the former to keep up with the growth of markets and the augmentation of financial products. The major problem is caused by the immediate manifestation of businessmen's immorality.

Malciu (1999, p.18-28) identifies the factors in the motivational assembly of creating accounting techniques' development:

- costs ensued from interest conflicts;
- managers' lack of competence;
- uncertainty and risk;
- variety of economic activities;
- blind spots of accounting concepts;
- attitude of financial-accounting information users;
- enterprise dematerialization;
- enterprise globalization;
- lack or scantiness of national accounting norms.

Creative accounting is used to impress the users of accounting information. It is a work executed ingeniously by subtle, sophisticated practices which allow for its delayed tracking down. This type of accounting derives from standard accounting and occurs because of the ineffectiveness in a field of activity. Distorting accounting information results in creating companies' favourable images. Although it is not a malevolent action, it misinforms investors, business partners and the state.

3. Relationship among true and fair view, creative accounting and frauds

The term true and fair view is originally Anglo-Saxon and it was used for the first time in 1947 in the Law of Commercial Companies (Companies Act) in Great Britain, where it was stated that: each balance of a company must ensure a true, fair picture of the company business in the end of such

procedures, whereas each profit and loss account of a company must provide the fair view of its results after financial practices. It should be noted that English accounting regulations have never defined this notion explicitly.

Additionally, the concept of true and fair view is relative because each user of accounting information has a certain perception about what a true, fair view means.

True and fair view's equivalent in French accounting is truthfulness which emerged in the French Law in 1937. Truthfulness was meant as a qualitative criterion designed as a reference when controlling accounting messages' reliability. It essentially corresponds to the will of being as close to reality as possible. The French system's truthfulness was gradually separated from the British true and fair view by its being devoid of its content because truthfulness was regarded as being the compliance with rules interpreted as observing the rules imposed by laws, regulations, practices. Having tried to define the concept of true and fair view, Lee asserted: "Nowadays, true and fair view has become a term used in arts. It supposes the provision of accounts set up in accordance with generally accepted accounting principles, the use of very precise figures, the accomplishment of reasonable assessments, and their adjustment in such a manner that irrespective of current accounting practices' limits the most objective view could be supplied, with no significant errors, alterations, influences or omissions. In other words, the content and operation of the law must be taken into account".

The analysis of this definition includes the following:

- References to the reasonable evaluations and to the limits of current accounting practices involve certain tolerance to some inevitable specifications. It is preferred to evaluate rather than precisely make mistakes, said J.M. Keynes who can explain why the requirement for true and correct view has been replaced by true and fair view. Regarded from this perspective, a true and fair view is an incentive to use creative accounting techniques;
- The most objective view means neutrality and this aspect is already present in accounting norms. By the way information is chosen and shown, neutrality involves the fact that financial statuses do not influence the decisions and judgments of accounting information users so that they could lead to a preestablished outcome. Analyzed from this perspective, a true and fair view is against the use of creative accounting techniques;
- The references to omissions and law content and operation have made some believe that the true and fair view request is much more rigorous: "true" means the content of the law, and "fair" refers to law operation. Analyzed from this perspective, a true and fair view is against the use of creative accounting techniques;
- If a law court had to decide whether or not a company's financial statuses provide a true and fair view, it would be difficult to identify other evaluation criteria rather than the compliance with universally accepted accounting principles. Analyzed from this perspective, a true and fair view is in favour of using creative accounting techniques.

Even the Fourth Directive states that creative accounting in certain circumstances is an instrument to reach a true and fair view: "when applying an accounting norm (rule), it is not enough to supply a true and fair view, the annex(es) (namely end notes) should include additional information" and "if applying an accounting norm is exceptionally unsuitable to provide the true and fair view of a patrimony, financial status, or outcome, then the respective norm should be derogated". It means a true and fair view has thus been accomplished only by the lack of compliance with the rules in force.

Therefore, creative accounting has a negative impact upon accomplishing a true and fair view if the flexibility allowed by accounting norms is used to make up reports in favour of a small number of accounting information users to the detriment of their majority.

The continental accounting system generally looks upon creative accounting as an impediment to achieving a true and fair view, because it is an unwanted, deceiving practice, whereas the Anglo-Saxon system proves much more flexible and thinks of creative accounting as being necessary in order to keep up with economic, social, or juridical growth.

The term fraud refers to an action deliberately undertaken by one person or several people in the leading board, among those assigned to govern, among employees or third parties, an action which involves the use of frauds in order to get unjust or illegal advantages.

A fraud may occur as a consequence of events such as:

- Handling or changing the records or documents (forging them so as to change or hide truths);
- Misappropriating or stealing certain assets;

- Inadequately allocating certain assets leading to an entity's worse financial status with direct consequences upon its performance continuation;
- Removing or omitting the effects of transactions from records or papers, or recording transactions that lack substance in order to create a different picture of financial statuses;
- Deliberately applying accounting policies in a wrong way in order to show financial statuses meant to mislead those who use them.

Consequently, it cannot be stated that fraud and creative accounting are absolutely synonymous. Both are deliberate actions, yet the latter generally obeys the law, not the operation of the law. Creative accounting is legal, it can even be a factor that helps reach a true and fair view when it is applied with good intentions. At the same time, it can also be proven that it is closer to fraud if regulations' loopholes are used to get some advantages for certain users of accounting information to the detriment of others.

4. Creative accounting practices in fiscal optimization

Creative accounting techniques make it possible for accountants to "escape" from their "ivory towers" where they are surrounded by "piles of papers and rules", namely they can use the opportunity of creative accounting application to capitalize their creativity, experiences and acquired knowledge. Thus, the role of an accountant changes significantly as he/she must show his/her other abilities, namely the freedom to cope with the changes brought about by the 21st century which does not only rely on applying strict rules, but also on thinking, reasoning, science and creativity.

Creative accounting techniques may refer to the following (Feleagă and Malciu, 2002, p. 390-391):

- Accounting norms may allow the choice of various accounting methods. For instance, the accounting norms of certain countries allow enterprises to choose between registering growth expenses in their profit and loss account, and such expenses' depreciation during the project duration. The enterprises concerned with creative accounting shall choose the right method to lead them to the desired view.
- Elements require evaluations or predictions. For example, the usage duration of a fixed asset is an evaluation performed by an enterprise in order to calculate depreciation. Hence: a creative accountant benefits from the opportunity of being more "optimistic" or more "pessimistic", namely of choosing a shorter or longer usage duration based on their own creativity related to the evaluation. In some cases, an accountant resorts to an expert for evaluating the usage duration of a fixed asset, thus relying on the expert's optimistic or pessimistic thinking.
- Making artificial transactions aims at influencing balance values or "smoothing" the results. For example, a fixed, concomitant asset is sold, then it is immediately taken in renting conditions during its remaining duration. The selling price of the fixed asset can be higher or lower than its current value because the difference can be compensated by rents that are higher or lower than the related market price.
- The time of making transactions is carefully chosen in order to provide a certain picture of accounts. For instance, a company owns a building purchased at 200,000 m.u. whose market value is 400,000 m.u. and the company's leading board is to decide upon selling the building in the year when they intend to raise their outcomes.

Using creative accounting techniques has the following effects:

- Increasing or decreasing the expenses. Quantizing the expenses can be done according to accounting norms; for instance, for certain assets, only the maximum number of years for their depreciation is indicated. The depreciation duration affects the size of an outcome. Similarly, the effects of provisions are the same upon outcomes.
- Increasing or decreasing the incomes. Ph.D. Professor Nicolae Feleagă believes that: "in certain circumstances, one can accelerate or slow down income recognition by applying the principle of caution or the principle of connecting expenses with incomes".
- Increasing or decreasing the assets. The ability to increase or decrease assets' net value is provided by the flexibility while calculating depreciation or provisions. In addition, inventories can be assessed by various methods and so their value may differ.
- Increasing or decreasing the owners' funds refer to changing the incomes and expenses that affect the size of an outcome, consequently the size of reserves.
- Increasing or decreasing the debts refer to the accounting norms of a country which make it possible for certain debts to be regularized, such as retirement-related debts. Thus, an enterprise

concerned with improving its outcomes proceeds to distribute its debt throughout the longest period allowed.

- Classifying the assets and debts one more time refers to the uncertainties that might exist in relation with ranking an element within a category or another. For instance, titles according to enterprise intentions can be classified as current assets or non-current assets.
- Influencing the information shown in annexes. The lack of relevant information may affect the decisions of outside users.
- Introducing accounting information can be a way to prove creativity.

The elements mentioned above lead to the idea that creative accounting basically enjoys the flexibility of norms. Although there is a clear distinction between creative accounting and fraud, namely the infringement of the law, both phenomena occur when enterprises face financial hardships and both of them rely on the intent to deceive.

Creative accounting is not illegal, but the managers facing financial difficulties look for solutions without taking account of ethical standards and therefore half a truth does not mean a lie, but cannot be entirely seen as truth either.

Whereas creative accounting involves accounting manipulations at the limit of legal regulations, frauds mean accounting manipulations which are completely beyond the limits of the law. Accounting manipulations in the form of frauds rely on the following traits: they allow financial statuses to look "nicer" by registering unreal sales of goods or services, or by overestimating the amounts ensued from current sales; they make it possible to introduce false information in financial statuses by recording debts and expenses at wrong values; they permit the deliberate introduction of false information regarding financial statuses by including incomes in a financial year that is different from related expenses; they allow the artificial increase of assets' values and, implicitly, company's value; they allow the leading board to omit significant information in the company's financial statuses in order to deceive users.

Ionaşcu (2003, p.164) insists upon the distinction between creative accounting and accounting fraud. Adjusting accounting policies to the economic growth should not be taken for those techniques which more or less avoid the accounting norms. The borderline between creativity and illegality is sometimes hard to identify. This confusing borderline is often maintained by those who promote and use the bad side of creative accounting.

In order to optimize a company's fiscal cost, a number of opportunities to practise creative accounting are provided by tangible and intangible assets, opportunities especially referring to the treatment of growth expenses and commercial fund, to reevaluation, to the depreciation policy and provisions, to the capitalization of expenses subsequent to operation commencement and of interests.

Using creative accounting in location operations resides in the ranking of financial and operational leasing contracts. This ranking has significant implications upon certain indicators such as the indebtedness rate and assets' return rate. Consequently, the companies that pursue the increase in their current expenses without affecting their assets and debts choose operational leasing. In a reverse manner, financial leasing is preferred.

The options of practising creative accounting in the field of inventories and projects in progress are especially connected with the evaluation of inventories, the amount of completed production, and the choice of the accounting method for construction contracts.

These practices and their impact upon outcomes are schematically shown below:

Table 1: Creative accounting practices

Practice	Company aims at increasing its outcomes	Company aims at decreasing its outcomes
Definition of expenses included in purchasing cost	Inclusion of several expenses in purchasing cost	Removing certain expenses from purchasing cost
Treatment of interest-related expenses	Capitalization of interest-related expenses	Recognizing interests in the expenses of the current financial year
Treatment of production indirect expenses	Inclusion of several expenses in production cost	Removing certain expenses from production cost
Decision to make or not an inventory of finished goods	Increasing the inventory of finished goods	Decreasing the inventory of finished goods
Evaluation of outflow	Using the FIFO method when	Using the LIFO method when

inventories	prices go up, respectively using the LIFO method when prices go down	prices go up, respectively using the FIFO method when prices go down
Accounting method for construction contracts	Method of promotion percentage	Method of project completion
Sale of inventories with the option of rebuying	Selling and rebuying inventories are analyzed as two distinct operations	Selling and rebuying inventories are analyzed as a single operation

Source: Feleagă and Malciu, 2002, p. 435

Other creative accounting practices refer to the provisions' policy, decreasing the losses from receivables, fixed asset production, in-substance defeasance etc.

5. Conclusions

An important role in fiscal cost optimization procedure is played by the accounting policies agreed upon by company management. Such accounting policies provide the ability to choose among several variants approved by legislative and regulatory acts.

According to the definition of Casta J.F. (quoted by Ristea, 2003, p. 12), an accounting policy means the "set of choices made by a board of directors on the accounting variables that lead to adjusting financial states' contents and form if the legislative constraints are obeyed. The accounting policy is part of an enterprise's twofold logical mechanism of optimizing choices and financial communication to its environment. Choices are made within a framework set up by numerous sources of accounting laws and fiscal rules which are especially applicable when financial states are concerned".

The freedom when making up accounting policies and choosing accounting methods although positively appreciated in terms of its creativity has always been a source of controversies on building and accepting the accounting truth. The accounting policies set and improved by enterprise management should ensure the provision of relevant and trustworthy information. A company's leading board must draw up a series of accounting bases, conventions, methods, rules and practices in order to reach the loyalty goal.

6. References

- Botea, N. D. (2011) *Optimizarea costurilor fiscale*, Available at <http://www.consultingreview.ro/articole/optimizarea-costurilor-fiscale.html>.
- Dinga, E., (2008) Considerații teoretice privind evaziunea fiscală vs fraudă fiscală, in: *Financial Studies from Centre of Financial and Monetary Research „Victor Slavescu”*, Vol. 12, issue 4, p. 20 – 50, Available at ftp://www.ipe.ro/RePEc/vls/vls_pdf/vol12i4p20-50.pdf.
- Feleagă, N., & Malciu, L. (2002) *Politici și opțiuni contabile, Fair accounting versus Bad accounting*, Economică Publisher, Bucharest.
- Grigore, M. Z., & Gurău, M. (2010) Fiscal management of Romanian Companies, in: *Lex ET Scientia International Journal - Juridical Series*, No. XVII, Vol. 2, p. 163 – 174, Available at <http://lexetscientia.univnt.ro/en/articol/FISCAL-MANAGEMENT-OF-ROMANIAN-COMPANIES~364.html>.
- Ionescu, C. (2006) Contabilitatea în fața provocărilor ingineriilor financiare, in: *Theoretical and Applied Economics Journal* No. 5 / 2006 (500), Available at <http://www.ectap.ro/articol.php?id=102&rid=5>.
- Malciu, L. (1999) *Contabilitate creativă*, Economică Publisher, Bucharest.
- Ristea, M. (2003) *Bază și alternativ în contabilitatea întreprinderii*, Tribuna Economică Publisher, Bucharest.
- Smith, A. (1965) *Avuția națiunilor*, Academia Republicii Populare Române Publisher, Bucharest.
- Tanase, M.G. (2006) Modalități de optimizare a costului fiscal în întreprindere, in: *Journal: The Journal of the Faculty of Economics – Economic Science* Series ISSN: 1582 – 5450 TOM XV, Vol. II, p. 513-517, Available at <http://steconomice.uoradea.ro/anale/volume/2006/finante-contabilitate-si-banci/87.pdf>.

ACCOUNTANCY – INFORMATION SOURCE FOR KNOWING THE ECONOMIC AND FINANCIAL ACTIVITY

PUICAN Liliana

*Ph. D. Student, Faculty of Economy and Business Administration, University of Craiova, Craiova, Romania,
puican.liliana@yahoo.com*

AVRAM Marioara

*Ph. D. Professor, Faculty of Economics and Business Administration, University of Craiova, Craiova, Romania,
marioaraavram@yahoo.com*

Abstract: *Accounting information is present in all fields of activity, representing a compulsory element for progress. Within the context of the market economy development and of the increase of its complexity degree, the economic information must develop accordingly as far as its area, content and efficiency are concerned, so that it can provide the elements needed in order to make decisions, so that it can mirror the exact assets and liabilities of the companies and the results of the economic and financial activity. The efficient exploitation of accounting information can be performed only within the framework of an information system in which accountancy is a basic component.*

Key words: accounting standardization, performance, accounting information, users, characteristics of information

JEL classification: M 41

1. Introduction

The market economy development and its complexity degree enhancement, as well as the economic transformations at European and world level require the provision of operative and complete economic-financial information.

The status accountancy created for itself in the social life substantiates in full the approaches for the permanent optimization of the information building and presenting procedures in the decision-making process and in the management of economic entities.

The ever more intensified globalization of capital markets imposes the use of a single accountancy language all around the world. In order to contribute to the economic stimulation and development of each country, the world economic system must benefit of credible and transparent accountancy information.

Considering the present-day globalization and regionalization context, the accountancy area became an interest factor for the national and especially international business environment due to the occurrence of a growing need for the comparability and transparency of companies' financial statements, no matter the geopolitical space where they are produced.

One can believe that a spontaneous harmonization is a response reaction to the harmonization need supplied by the accounting practice or, in other words, the spontaneous harmonization comes due to market factors and not as effect of accounting regulations and their harmonization process.

A vast globalization process that leads to an accentuated sensibility and instability of markets and the business environment in general characterizes the present-day world economy. They manifest, right now, by a profound economic and financial crisis. Thus, many economic entities face difficulties, especially the weakening of the economic activity, the severe diminishment of demand, with chain financial blockages, increasing the costs for loans, and the volatility of the exchange rate. As regards this, major modifications at the level of macroeconomic management impose, but also at the level of each economic entity.

Accounting information is present in all fields of activity, representing a compulsory element for progress. Within the context of the market economy development and of the increase of its complexity degree, the economic information must develop accordingly as far as its area, content and efficiency are concerned, so that it can provide the needed elements in order to make decisions. Therefore, it can mirror the exact assets and liabilities of the companies and the results of the economic and financial activity. The efficient exploitation of the accounting information can be performed only within the framework of an information system in which accountancy is a basic component.

The accounting activity has a significant contribution to the economy by means of its content that harmoniously combines the abstract theory and the reality of the phenomena studied. It supplies a correlated and verified information system, leaving no space for subjectivism and promoting the rigorousness and exactness when mirroring the economic and financial phenomena.

The importance of management communication grew as the company expanded its borders, and the ever more intensified globalization of capital markets imposes the use of a single accountancy language, all around the world, a fact achieved through standardization and harmonization. The financial statements that are, in fact, the nucleus of the syntheses of accounting, represent the least expensive and the most outspread management communication method. The users of the information from the financial statements try to assess the profitability of the company in general, but also its liquidity risk.

The annual financial statements are a highly important accountancy instrument in the management process, being necessary both in order to support the decisions on allotting, financing, using and recovering the funds, organizing the control on the implementation of the decisions made, as well as in order to set out certain rights and obligations, of certain responsibilities and challenges coming from the patrimony management and development activity.

Harmonizing the national accountancy with the International Accountancy Standards and their alignment with the European accountancy directives is a process that generates multiple issues concerning the regulations and the doctrine, considering the reporting to a general concept as representing a “key ingredient” by which an adequate and credible communication of economic, environment and social opportunities and challenges is ensured. These challenges are major concerns for the management of any company.

By standardization, achieving the objective on “formulating accountancy concepts, principles and norms relying on a precise and identical terminology for all accountancy producers and users and applying them in practice in order to ensure the time and space comparability, the relevance and credibility of accountancy information” is envisaged.

2. Notion and content of the accountancy information

Accountancy is a key element in the life of any economic entity that requires a separate department from the organization standpoint and having the main function of recording the events in the entity’s life, no matter how insignificant they would seem.

It is the most important information source concerning the economic activity of any economic company, the synthesis financial documents being the main forms of publishing the accountancy information that must also have a forecasting trait in order to be useful for the decision-making process.

Accountancy was born at the same time as the subsistence economy of the primitive commune; the drawings in painted caves are the initial forms of “calculations”: how many animals were hunted, how many animals skinned and how many coats resulted from this process.

At the same time with the economy development, the “calculation art” was optimized also, the turning point for this being the mathematic model created by Luca Paciolo di Borgia more than 500 years ago, after which the accountancy became irreplaceable, without alternatives. Now, it is a science and an art of tracking the existence and movement of capitals, of setting out the activity’s results and their allotment.

Accountancy is borderless. Its theoretical, scientific and practical limits are infinite as regards the inclusion of economic phenomena and the manner for systematizing, processing and presenting them, thus that nobody can say he or she knows everything about it.

The companies, enterprises, institutions of any type and size, the legal persons all around the world draft “accounts” and financial statements for submitting to the information users, owners, auditors, directors, tax bodies, according to a single methodology and this is the accountancy.

The art of accountancy based on scientific principles was already known in Italy before 1495 when Luca Pacioli (1445-1517), also known as Father Luca dal Borgo, published his first accounting treatise in Venice.

In Romania, the accountancy father is Theodor Stefanescu born in Bucharest, in 1842.

In the “General accountancy” paper of 1947, the 13th edition, the author, university professor C. G. Demetrescu defines the accountancy on three coordinates:

a) object – the accountancy is a branch of social sciences that ensures the methodic and orderly recording of all operations concerning the value, right and obligation movements, as well as the modifications determined by the results of the activity developed;

b) purpose – the accountancy has the purpose of setting out the economic and legal situation of the company, the permanent exercise of a control;

c) means – the accountancy uses its own means: accounts, trial balances, logs.

According to the Law of accountancy no. 82 / 1991, republished in June 2007, article 2, paragraph 1, *accountancy is a specialized activity that ensures the measuring, assessing, knowing, managing and controlling the assets, debts and equity, as well as the results acquired during the financial period by the legal and natural persons that are bound to organize and to manage their own financial accountancy. For this purpose, they must provide the chronological and systematic registration, processing, publication and keeping of information in connection to the financial position, financial performance and treasury flows, for their internal requirements, as well as in their relations with the present and potential investors, financial and commercial creditors, clients, public institutions and other users.*

The subject matter of patrimony accounting according to Law of accounting no. 82 / 1991, is “showing the movables and real estates in money expression, including the soil, natural wealth, deposits and other goods with economic potential, moneys available, securities, rights and obligations of natural or legal persons, as well as the modifications occurring following the patrimony operations made, expenses, income and results acquired from them”.

The annual financial statements are a set of synthesis accounting documents that present information concerning the financial position of an entity, the financial performance and situation of treasury flows, useful during the decision-making processes of allotting and using the resources, of acquiring and distributing the results. Being of general concern, the financial statements are meant to meet the common information needs of a broad range of users (shareholders, creditors, employees and public).

In order to reach the objectives mentioned above, the financial statements offer information on the following: assets; debts; equity; income and expenses; treasury flows.

3. Producers and users of accountancy information

The importance of accountancy in the modern economy is obvious.

Thus, the gradually more demanding bodies of the European Union and everywhere are in charge of organizing and the operation of accountancy as a basic component of business.

Among the bodies specialized in the organization and operation of accountancy are the following:

- Accounting Regulation Committee (ARC);
- Federation of European Accountants (FEA);
- International Federation of Accountants (I.F.A.);
- European Financial Reporting Advisory Group (EFRAG);
- Financial Reporting Council (F.R.C);
- International Accountancy Standards Board (IASB);
- International Accounting Standards Committee Foundation (IASCF);
- Accounting Standards Interpretation Board (SEC).

To all these bodies add commissions, councils, associations, at zonal or international level, including outside Europe, thus that one could say that the faith of accountancy is in the best hands and, obviously, minds. Here must be mentioned also some Romanian bodies, such as the Consultative Accountancy College, the Accounting Experts Body, the Chamber of Financial Auditors of Romania (C.A.F.R), etc.

Still, the accounting organization and ensuring it according to the European demands is the responsibility of every legal person that holds a patrimony and that initiates and makes decisions in commercial, economic and money documents. That is because, as stated in Law of accountancy no. 82 / 1991, republished in 2007, the accountancy must not be mistaken for or reduced to drafting and classifying documents or other papers. It is the financial management of companies and institutions in a manner that complies with the present-day requirements: European integration, free circulation of goods and money, transparency in using the EU funds and resources, strengthening the financial resilience capacity in a competition-driven and obstacles-filled economy.

The most used work instruments are the following:

- I.A.S - International Accounting Standards;
- I.F.R.S - International Financial Reporting Standards;
- I.P.S.A.S - International Public Sector Accounting Standards;

-I.S.A - International Audit Standards

The annual financial statements are a set of synthesis accountancy documents that submit information concerning the financial position of an entity, its financial performance and treasury flows that are useful during the decision-making processes for allotting and using the resources, for acquiring and distributing the results. Being of general concern, the financial statements are meant to meet the common information needs of a broad range of users, for example shareholders, creditors, employees and the public.

In order to reach the objectives mentioned above, the financial statements offer information on assets, debts, equity, income and expenses (including gain and loss) and treasury flows. The data and information presented in these financial reporting documents rely on a construction based on the human and professional quality of those that process these data, this being a structure relying on the professional reasoning of the accounting professionals.

One must mention the fact that is rather difficult to separate the PERSON of the accountant, of the activity he or she supplies, the conditions of the environment in which he or she works, or of the individual interests and needs. The accountancy information users can be classified in two large categories, these being the following: internal users and external users. The internal users of the accountancy information are managers, decision-making bodies, management bodies.

They use the information coming from the current financial accounting, from the financial statements, as well as from the management accounting (administration internal accounting), the latter supplying information only for the internal users.

The company's management must be informed in connection to the possible internal control deficiencies that might affect the quality of accounting information, the qualitative insufficiency of the accountancy information being able to damage all other elements making up the general internal control device, including the financial-accounting component.

Among the external users, the following can be encountered:

- investors, financiers,
- creditors,
- commercial partners (suppliers and clients),
- social partners (employees and trade unions),
- public power (tax administration)
- financial analysts,
- legal system,
- the public.

A. The existing *investors* have different interests and thus, different information needs. Thus, those holding the privileged shares will be interested firstly of the profit existence, their dividend being a fixed rate no matter the profit achieved, as against those holding ordinary shares that will be interested also in connection to the business growth. At the same time, the majority shareholders will have always other information needs than the minority shareholders, the interests of these two groups being dissimilar due to the decision-making power difference.

Also in the investors category must be included the potential investors whose information need is related to the current profitability of the business, as well as that forecasted. If a legal person makes an investment for which it has drafted a feasibility study and a cost-benefit analysis, when drafting the cost-benefit analysis, a series of information supplied by the accounting of that entity will be used. These financial-accounting information are those found in the accounting books (values of stocks, inventory values, etc.), as well as the forecasted information (treasury flow, income, expenses, etc. forecasts).

It is understood that the decision to make an investment or, even more, to finance its achieving (a case when the creditors can use the information also) relies on the information supplied by the entity's accounting system and the accounting professional reasoning. An in such circumstances, the role of accounting as instrument of supplying support for the decision based on the loyal image and forecasts well-grounded on the accounting reality is relevant.

B. Creditors

Among the company's creditors, next to shareholders or affiliates, that sometimes can appear as entity's creditors, a category whose information needs cover a rather large information area is that of loan institutions. The creditors are interested mainly in the entity's indebtedness, its reimbursement capacity, its ability to generate profit, this being the source of covering the interests, the manner of financing the current activity, as well as the financing sources of the investment activity, the structure of the company's

assets, the making up and payable due dates of debts and receivables. The requirements lodged in connection to the information that the accounting system must offer differ among the loaning companies.

C. Commercial partners

The suppliers are interested, in one hand, of the company's ability to pay its commercial credit and, on the other hand, of the business perspective in order to set out some lasting commercial relations with growing contract values.

The clients, as commercial partners, are also interested of the financial status of their supplier due, mainly, to the commercial credit given, this time, by the supplier and, secondly, due to the continuity need in the supplying activity, but also the supplier's ability to ensure the supplying of merchandise to the client as vastly as possible.

D. Social partners

The employees, be they organized under the associative form of trade unions or not, follow the profitability of the employer entity because of this depends the possibility to negotiate some salary raise and the improvement of work conditions, these having effects also on the investment activity of the company.

The trade unions compare the data at microeconomic level of an employer to those registered at branch level, as regards the results and the salary policy in order to negotiate the collective employment contracts.

E. Public power

The economic agents identify the public power as being the taxation body and its activity of collecting the income to the state budget. However, next to this concern of the public power, there are also data collection and statistics achieving activities at different macroeconomic levels or geographic areas.

As well, a very important role for the accounting professionals and, by them, for all users of the accounting information, is the regulation one of the administrative function at central and local level.

This activity relies on the information gathered from the economic entities, information collected by the accountants, and it has direct effects on their activity and accountancy.

F. The financial analysts are "those that make the numbers speak" according to the purposes of analysis making. Even if the accountancy is not the only information source for analysts, they also must know markets, technologies, the political and social environment, the relational climate of the company; it is the basic source, the most important source, all others coming to complete the information gathered by the accountancy.

Beginning with the accountancy information, the analysts offer support and assistance in circumstances such as: contracting loans, buying shares in the capital of other companies, purchases and mergers of companies, launching / waiving a product, entering a new market or activity sector, and assessing the company's health. Of all analysis types, the stock-market analyses are the most important.

G. Judicial system – The law of accountancy provisions for the legal persons, no matter the ownership or organization form, as well for the self-employed persons (natural persons holding the merchant position) the obligation to organize and develop their own accountancy that would ensure at least drafting the substantiation documents, recording the patrimony operations, regular inventorying the patrimony, and publishing the information connected to the results.

In the cases when, no matter the reason, a litigation is submitted to the courts of law for resolution, they can request the performing of some judicial accounting expertises. These expertises rely on the accounting records of the parties involved in the process. In such circumstances, by documents and records, the accountancy becomes evidence before the court of law.

H. The public – In this category, that is gradually more vast, can be included the political responsible persons of collectivities, at local and central level, they being interested in aspects as occupying the work force, setting out correctly the taxable income, collecting the taxes and charges, as well as the needs of economic entities as regards the regulations.

Also in the public category can be included the ecology and environment protection organizations that are interested in the effects different processes and production technologies can have on the environment, the total amount of expenses the entities make for environment protection and the diminishment of pollution effects generated by their activity. As well, in the public category are included the civic consumers protection organizations whose information demand is oriented towards the price policies, promotion, evolution and even the making up of prices, the price-quality ratio.

Although the financial statements set cannot meet all information needs of these users, there are necessities common to all users.

The number of users and the extremely large range of information that the accountancy supplies represent the value that one must acknowledge for this techno-science.

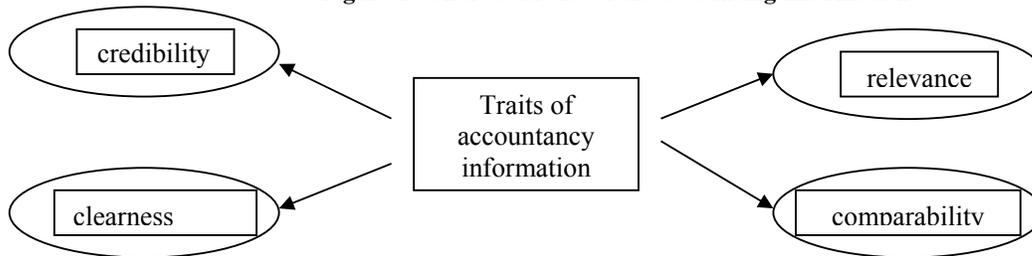
4. Efficiency of accountancy information

The “raw material” of the diagnosis is information. The quality of information has a significant influence on the quality of final diagnosis.

The accountancy information that does not meet a series of characteristics such as credibility, clearness, relevance and comparability only leads to the disaster of users that, as seen above, are gradually increasing as number and, in a broader meaning, to the disaster of the entire economy.

The characteristics of the accounting information are presented in figure 1.

Figure 1: Characteristics of the accounting information



The credibility of financial statements is one of the most important traits of the accounting information supplied by the annual financial statements.

5. Functions of accountancy, their role in preventing the economic-financial frauds

The main functions of accountancy are the following:

- Data registration and processing function is the recording, according to some own principles and rules, of the economic processes and phenomena that occur in the patrimony units and they can be expressed as values.
- Information function is the supply of information concerning the structure and dynamics of patrimony, of the financial status and results acquired in order to ground the decisions. The accountancy has an internal information function (for managing the unit) and an external information function (of third parties).
- Administration control function is made up of verifying, with the help of the accountancy information, of the manner of keeping and using the material and money values, the resources management, the control of observing the financial discipline, etc.
- Legal function – data supplied by the accountancy and the supporting documents are used as evidence before the courts of law, in order to prove the realness of some economic operations and to set out the patrimony liability for the damages caused.
- Forecasting function – the accountancy information corresponding to a period already ended can be used for determining the evolution trends of future economic phenomena and processes.

Observing the functions mentioned in the accounting practice ensures the prevention of economic-financial frauds.

Thus, I believe that a highly performance management is achieved only by a pertinent and on time information of the decision-making party, this being also the reason due to which I have approached, in this paper, the necessity to pay the required attention to the accountancy information as credible information source for its internal and external users.

6. Conclusions

The progress and development of a nation rely on a healthy economic, social and moral environment. These goals can be fulfilled only if a correct accounting becomes "the religion" of any transaction, and the audit identifies itself with validating and legitimating some credible information.

Auditing the information included in the financial statements leads to increasing the trust of investors, credit institutions, insurance-reinsurance companies and the capital market in general. Created correctly and audited adequately, the accounting information grants safety and protection in business, the Romanian economic environment having suffered greatly during the past years as a consequence of the credibility of financial statements that became critical for its users.

The users of audited financial information, beneficiaries of work performed by financial auditors, require competence, objectivity, and professionalism in order to assure optimum solutions to the problems and goals of a business that spins around capital investment decisions, thus that their yield be as high as the expectations. Let the assurance supplied by the financial auditor as regards risks, information risk, become the cornerstone of existence of entities, of the adequate organization

7. References

- Avram, M., Avram, V. (2003) *Situațiile financiare anuale*, Editura Radical, Dr. Tr. Severin
- Danescu, T. (2007) *Audit Financiar: convergențe între teorie și practică*, Editura Irecson, București
- Băbăiță, V., Epuran, M., (2002) *Teoria generală a contabilității*, Editura Mirton, Timișoara
- Feleaga, N., Ionașcu, I. (1995) *Contabilitatea financiară*, Editura Economică, București
- Pîntea, I. P. (1995) *Contabilitatea financiară a agenților economice din România*, Editura Intelecredo, Deva
- Staicu, C. (2002) *Contabilitatea financiară armonizată cu directivele Europene*, Editura C.E.C.C.A.R., București
- Dicționarul explicativ al limbii române
- Legea 82/1991 modificată și completată – Legea Contabilității
- OMFP nr. 2861/2009 pentru aprobarea Normelor privind organizarea și efectuarea inventarierii elementelor de natura activelor, datoriilor și capitalurilor proprii (pct.1(2))
- Ordinul M.F.P. 3055/2009 pentru aprobarea Reglementărilor contabile conforme cu directivele europene
- Contabilitatea - expertiza și auditul afacerilor – CECCAR 2010-2011
- Audit financiar – CAFR 2010-2011

CREDIT RISK TRANSFER MECHANISMS IN THE EU BANKING SECTOR

ROMAN Angela

Ph. D. Associate Professor, Faculty of Economics and Business Administration/Department of Business Administration, Alexandru Ioan Cuza University, Iași, Romania, aboariu@uaic.ro

ȘARGU Alina Camelia

Ph. D. Student, Faculty of Economics and Business Administration/Department of Business Administration, Alexandru Ioan Cuza University, Iași, Romania, s_alina_camelia@yahoo.com

Abstract: *In the last two decades the usage of innovative financial instruments has increased in the European banking sector. Traditional instruments like loans sales have been complemented by new ones like the credit derivatives instruments. In this context, the aim of our research is to test if and how the usage of the credit derivatives instruments and the loans sales operations can be influenced by a series of banks characteristics. In order to achieve this we have used a multiple linear regression analysis, where the independent variables were represented by a series of banks characteristics, like banks size, their profitability or capitalisation ratio and the dependent variables were represented by the estimations made regarding the major European banks presence on credit derivatives and loans sales markets. The sample used was comprised from the major 20 banking groups located in the European Union and the analysed period was 2007-2009. The obtained results suggest that larger banks, well capitalised and strongly geographically diversified tend to be the most active in credit derivatives instruments operations, while loans sales operations tend to be dominated by the banks well diversified, highly capitalise and that have very good loaning opportunities.*

Key words: credit derivatives, loan sales, banks, regression analysis

JEL classification: C 39, G 15, G 21

1. Introduction

The traditional credit risks transfer instruments, like loans sales, have been used in practice for quite some time, while the new mechanism for credit risks transfer, like credit derivative instruments, have been developed and became very popular only in the last 10 years. The statistics of the British Bankers Association underline that the size of the credit derivative market has grown dramatically in the last years, from 893 billion USD in 2000 to 23000 billion USD in 2009. Different market researches (see BBA, 2006) underline that approximately only 1/3 of the transactions with such instruments are related to the banks loans portfolio. Despite all this, the credit derivatives instruments have quickly gained an important role on the credit risk transfer market. More traditional instruments, like loans sales, have also registered an increase in the last years, their value almost doubled from 112 billion dollars in 2002 to 221 billion dollars in 2009 (LSTA, 2009).

In this context, the aim of the paper is to test if and how a series of banks characteristics are influencing the transactions undertaken by the major European Banks with credit derivatives instruments and loans sales operations. In order to achieve this we have used a multiple linear regression analysis, choosing a series of banks characteristics as the independent variables. In addition we have performed also a T-test in order to establish if the banks from our sample are forming a homogenous group. The obtained results underline that the larger banks tend to be involved in credit derivatives operations while the banks more geographically diversified and with a high capitalisation ratio tend to be the most involved institutions in loans sales operations.

In order to achieve this the reminder of the research is organised as follow: the second part is dedicated to a review of the academic literature on this subject, the third part presents the data and methodology employed in our research, part four presents the empirical results for the usage of credit derivative instruments and loans sales operations and part five contains the concluding remarks.

2. Review of the academic literature

Many researches from the academic literature have tried over time to address the question on the need of the existence of a loan sales market as well as of a credit derivatives market. According to this literature, many of the arguments are consistent with those existing in the case of the financial innovations in general.

Hence, according to the classification scheme of financial innovations proposed by the Bank for International Settlements (1986), the loan sales and credit derivatives can be classified as innovations used to transfer risk. As financial innovations that contribute to risk transfer, the loan sales and credit derivatives allow banks to reduce the credit risk and to manage it in an active way. If banks sell and buy loans or buy/sell protection through credit derivatives in order to increase portfolio diversification is expected from them to also better manage the risk related to their own portfolio. A series of papers present the role of *loans sales* transactions as active tools for managing credit risk. Hence, according to Pavel et Phillis (1987), Berger et Udell (1995) and Demsetz (2000) a bank may wish at some point to increase the degree of diversification of loan portfolio by selling certain types of loans in order to buy other types of assets (the diversification hypothesis). Regarding the relationship between the risk of the seller bank and the loan sales, the empirical results are ambiguous. According to Pavel (1989), on average, the loan sales transactions have a reduced impact on bank risk. More recently, Cebenoyan et Strahan (2004) conclude that very sophisticated banking practices of risk management, such as loan buying and selling, can improve the availability of bank loans and help to reduce bank risk. The subject of using *credit derivatives* by banks as tools for improving portfolio diversification, it has been addressed in several papers, such as the one conducted by Das (2000), while the impact of using credit derivatives on the credit risk transfer market was modeled by Duffee and Zhou (2001), concluding that credit derivatives can help reducing the problem specific to the “lemons market” existent in the loan sales market. Thompson (2007) also investigated the conditions under which credit risk can be effectively transferred through credit derivatives and credit sales transactions, bringing a number of important arguments in their favor.

In this context, we would like to contribute to the existing literature by providing evidence on the way in which certain banks characteristics influence the activities of the major European banking groups with credit derivative instruments and loans sales. In order to achieve this we have employed a multiple linear regression analysis.

3. Data and metrology

The aim of our research is to analyse the usage in practice of the credit derivatives and of the loan sales operations by a sample composed from the main major European banks between 2007 and 2009. The sample encompasses the main 20 banking corporations located in the European Union by their assets size according to the data provided by the Bureau Van Dijk Bankscope database.

Table 1: The major European banks that are part of our sample

1. HSBC (GBR)	11. Natixis (FRA)
2. BNP Paribas (FRA)	12. SEB (SWE)
3. Santander Central Hispano (ESP)	13. Svenska Handelsbanken (SWE)
4. Deutsche Bank (GER)	14. Commerzbank (GER)
5. Barclays Bank (GBR)	15. Swedbank (SWE)
6. Banco Bilbao Vizcaya Argentaria (ESP)	16. Royal Bank of Scotland (GBR)
7. Société Générale (FRA)	17. Lloyds TSB Group (GBR)
8. Banca Intesa San Paolo (ITA)	18. Raiffeisen International Bank Holding (AUT)
9. Standard Chartered (GBR)	19. Credit Mutuel – CIC (FRA)
10. Unicredit (ITA)	20. Credit Agricole (FRA)

Source: Bureau Van Dijk Bankscope database

O large part of banks from our sample is located in France and the United Kingdom (5 and 4 respectively out of the 20 banks from our sample), while the other banks are somehow evenly split between the other countries from the European Union. Also, we underline that the banking groups from our sample are mimicking sufficiently enough the characteristics of the banking system of the European Union, owning approximately 47% from the total banking assets and 39% from the total loans granted within the EU. In order to investigate de activity on the credit risk transfer markets of the banks from our panel we have build our own database using three different sources (Bureau Van Dijk Bankscope database, Loan Pricing Corporation’s Dealscan database and the activity annual reports of the banks from our sample). The data regarding the loans have been extracted from the Loan Pricing Corporation’s Dealscan database, that provides the terms for the loans contracts in the case of the major transactions undertaken by the large banks globally (these being mostly syndicated loans). Taking into account that there are no concrete data on the transactions undertaken on the secondary credit market in the European

Union we have used the value of the syndicated loans granted by the banks from our sample (1 – term loans; 2 – that are based on a concrete contract) in order to estimate the activity of the banks from our sample on the secondary credit market. This approach is in accordance with the market practices (e.g. Fabozzi, 1998; Saunders, 2000) and also has been used previous in a series of empirical studies (e.g. Drucker et Puri, 2007), and is based on the assumption that almost all the loans sold on the secondary credit market are syndicated term loans granted on the primary credit market, based on concrete contracts.

The data regarding the usage of credit derivatives by the European banks at individual level are extremely scarce, taking into account that there are no special regulations regarding the publicity of such data at institutional level. The information regarding the way in which the banks are using credit derivatives are in general available at aggregate level, through the market research available. For our research we have gathered the information on the value of credit derivatives brought and sold by the banks from our sample during the analysed period 2007-2009 using as a source the activity reports and the consolidate financial statements of the sample banks. In 2009, 10 banks (from 20) have made public the value of credit derivative operations, while 6 banks have reported using such instrument for hedging/transactions but without providing the amount for these operations and the other 4 banks have not mentioned anything about such operations on their financial and activity statements. Confirming the results of previous studies (European Central Bank, 2004) also in the case of our analysis it becomes obvious that credit derivatives are mostly used for trading operations and to a lesser extent for hedging operations, especially in the case of the larger banks from our sample. In general the banks from our sample are present on the market both as buyers and sellers of protection against negative events related to loans, the most used derivative products being the swaps on individual credit risks.

In table 2 we have presented the total values of credit derivatives and loan sales operations undertaken by the banks from our sample. Confirming the raise of the derivative market the value of this type of transactions undertaken by the banks from our sample have increased during the analysed period from 4593 billion euro in 2007 to 5931 billion in 2009. Still, this increased popularity of credit derivatives dose not seems to influence the value of loan sales that registers a stagnation during the analysed period, which can be attributed to the start of the financial and economic downturn. These evolutions suggest that the credit derivatives instruments and loan sales operations tend to be considered by the banks from our sample rather complementary instruments then substitute instruments.

Table 2: The activity undertaken with credit derivatives instruments and loan sales operations by the banks from our sample between 2007 and 2009

	2007	2008	2009
Credit derivatives instruments			
Main value (billion euro) of protection instruments against negative events related to loans, sold and brought:	4593	5378	5931
• as percentage of total assets;	72,79%	57,41%	37,79%
• as percentage of total loans.	158,29%	95,37%	87,31%
The number of banks that have provided information on operations undertaken with credit derivatives instruments	14	13	10
Loan sales operations			
The value of granted loans / sold (billion euro)	123,17	95,21	93,14
• as percentage of total assets;	1,29%	0,89%	0,77%
• as percentage of total loans.	1,71%	1,36%	1,22%
The number of banking institutions that have disclosed information on the loans sales operations undertaken	18	17	18

Source: Bureau Van Dijk Bankscope database and Loan Pricing Corporation's Dealscan

The main aim of the research is to test, through a multiple regression analysis, if and how the usage of the credit derivatives instruments and the loan sales operations can be influenced by a series of banks characteristics like: their size, the quality and the diversification degree of their portfolio, their capital structure, their liquidity and profitability. Starting from these considerations, we have chosen a set of indicators in order to measure the characteristics of the analysed banks, taking into account at the same time that these indicators have been used also in previous empirical studies and are available for all the banks from our sample:

The size of the banks: Natural logarithm of total assets.

The quality of the loans portfolio: Loans loss provisions / total credits.

The diversification of the loans portfolio:

- total loans granted to the retail clients / total loans;

- Herfindahl–Hirschman index = $\sum_{i=1}^3 L_i^2$, where L_i represents the percentage of the loans granted for the geographical region i , where each credit category includes the credits granted to debtors with different nationalities (domestic, European Union member countries, rest of the world);

Capital structure / liquidity:

- capital adequacy ratio = (Tier 1 capital + Tier 2 capital) / risk-weighted assets, where Tier 2 capital includes subordinated debt, subventions for investments, the general reserve for risk and other types of reserves;
- deposit run-off ratio = liquid assets / customers deposits and funds attracted on short-term.

Profitability:

- Net interest incomes / Total average assets;
- Other exploitation incomes / Total average assets;
- Return on average equity (ROAE).

The size of the banking institutions (natural logarithm of total assets) can affect the risk transfer transactions. In general, the banks can benefit from better crediting opportunities and can have the tendency to acquire protection for the loans granted / can use loan sales operations in order to better use their resources (see Pennacchi, 1988). In regard to the loan sales operations, because of the agency problems that exist in the case of these transactions, the banking institutions that have a better reputation – in general the more larger ones – will not face problems in the selling of loans or their syndication (see Haubrich et Thomson, 1993; Dennis et Mullineaux, 2000; Drucker et Puri, 2007). The fixed cost associated with the risks transfer techniques alongside the high expertise required for the establishment of the prices for the more sophisticated risk transfer instruments (especially in the case of the credit derivatives) makes these operations more viable for the larger banks. In another train of thoughts, the smaller banks have less loans diversification opportunities and thus will try to diversify their portfolio through the selling of protection against negative events related to loans, through credit derivative instruments or through the acquisition of loans from the secondary credit market. In an alternative way, when the smaller banking institutions are faced with a series of legislative limitations regarding their credit activities then their tendency will be to get more engaged in loans sales operations (Demsetz, 2000).

The way in which we have measured the **quality of the loans portfolio** (loans loss provisions / total loans) will help us to explain the way in which the banks are participating in the credit derivatives and loans sales market. In general the riskier banks – more exactly the banks that have a lower portfolio quality – tend to be more engaged in loans sales and the acquisition of credit risk protection in order to diminish their potential for registering troubles and to maintain their current capital level (Pavel et Phillis, 1987). On the other hand, considering the quality of the loans portfolio as an indicator of the banks reputation and taking into account that most loans sales are definitive, the loans buyers will have the tendency to avoid the sellers that have a doubtful reputation and an unknown quality of their assets. This evolution is in accordance with the “lemon market” problem that tends to appear in the case of the loan sales (Haubrich et Thomson, 1993; Demsetz, 2000). In regard to the credit derivatives instruments, most of the assets taken as reference are previously evaluated and are assigned a certain investment rating and thus the quality of a bank’s loans portfolio does not represent the most significant indicator of its activity on the credit derivative market.

The process of **loans portfolio diversification** represents one of the main reasons for the selling of loans and the usage of credit derivatives instruments. The banks that do not have portfolio diversification opportunities can improve their loans mix by using credit derivatives instruments or through operations on the secondary credit market (Pavel et Phillis, 1987; Demsetz, 2000; Minton et al., 2006). In order to underline the diversification process that the banks from our sample are undertaking we have used two measurement methods. The first one is based on the ratio between the loans granted to retail customers and the total loans granted by the bank: the higher the ratio the higher the loans portfolio is concentrated and the lower the ratio the lower the loans portfolio is concentrated and thus the bank tend

to be less involved in transactions with credit derivatives instruments or on the secondary credit market. This is consistent with the idea that retail loans are per se more numerous and more diversified – for example, in regard to the types of the granted loans, their maturity and their localisation – than the credits granted to other types of clients, and implicitly are harder to be removed from the balance sheet through loan sales operations or the usage of credit derivatives. The second method for the measurement of the loans portfolio diversification is based on a variation of the Herfindahl–Hirschman index that is based on the nationality of the debtors, thus underling the geographical diversification of the loans portfolio. In this case we expect that the banks that are registering a high level of this indicator – the more geographically concentrated banks respectively – will access more often the loans sales market and have a higher frequency of using credit derivatives instruments than in the case of the banks that are registering a lower geographical concentration level of the loans portfolio.

According to the academic literature, both theoretical and empirical, the gaining of additional funds and the freedom of capital represent the main reasons that determine the usage of loans sales operations and of credit derivatives instruments. This is the reason why, we consider that the banks that are facing a series of constrains both regulatory and liquidity related will tend to sell a part of their loans portfolio in order to get additional funds rather than trying to attract additional deposits or to obtain resources from the capital market. As a way to measure the *capital structure* of a bank we have used as an indicator the capital adequacy ratio, this being calculated based on the Basel norms. As a modality to measure the *liquidity* degree we have used a deposit run-off ratio. Both in the case of the capital ratio and the liquidity ratio, the higher their value the more these banks will liquid and capitalised and their anticipated loans sale volumes will be lower. Unlike the loans sale operations, the usage of credit derivatives instruments does not leads to the enhancement of the bank liquidity and thus the ratio regarding the liquidity will not have an impact on the way in which credit derivatives instruments are used. In another train of thoughts, the results of some previous empirical studies (see Minton et al., 2006) suggest that there is an inversely proportional relationship between the level of liquidity that a bank has an its operations with credit derivatives instruments, which underline that banks with a low level of capitalisation tend to be more involved in hedging operations.

In order to analyse the relationship between the *profitability* of a bank and its participation on the credit risks transfer market we have used a series of indicators that underline its profitability. Alongside the classical indicator for profitability, namely the return on average equity (ROAE), we have used a ratio between the net income and the average assets and a ratio between other incomes and average assets, thus obtaining a better view on the credit operations that the banks are undertaking. The granting and the administration of loans generate for a banking institution incomes both from fees and commissions and also from interest. Starting from the comparative advantages hypothesis, the more the credit activity of a bank is profitable the more this bank will have the tendency to be engaged in loan sales operations, because the granting and administration of loans is more profitable than their keeping on the balance sheet until maturity. In regard to the credit derivatives instruments, taking into account that most of these types of operations are made for transactional purposes and to a lesser extent for hedging purposes, it is to be expected that the banks involved strong in these types of operations are registering a high level of the ratio between exploitation incomes and total average assets.

Table 3: Summary statistics for the banks in our sample, regarding the banks indicators used in 2007

	Average	Standard Deviation	Minim	Maxim
The size of the banks (natural logarithm of total assets)	10,32	0,56	11,74	14,24
Quality of the loans portfolio	1,84	1,47	0,02	9,11
Diversification of the loans portfolio	0,27	0,15	0,06	0,69
Geographical diversification	0,56	0,17	0,32	0,86
Capital adequacy ratio	10,98	1,49	9,57	16,23
Deposit run-off ratio	14,93	19,54	0,12	64,57
Net interest incomes / Total average assets	0,83	0,59	0,15	2,13
Other exploitation incomes / Total average assets	0,65	0,61	0,02	1,89
ROAE	12,98	6,39	3,41	31,78

Source: authors calculations

A summary of the statistics regarding the banks indicators for the year 2007 are underlined in table 3. We can observe that the banks from our panel are not significantly different in regard to their

dimension and their level of capitalisation, this being underlined by the relatively low variation from the average registered in the case of these indicators. The differences among the banks from our sample tend to be more evident in the case of the geographical dispersion of the portfolio and in the case of the profitability ratio, which registered a standard deviation from the average of approximately 71%. Nevertheless, the chosen banks sample is extremely heterogeneous in regard to the quality of the loans portfolio and the registered level of liquidity.

4. Empirical analysis

In order to analyse the different characteristics of the banking institutions from our sample, that represent the main participant on the European loans sales market and on the credit derivatives market we will take the following steps. In order to check the homogeneity of the chosen sample, in a first stage we have selected the first 5 participants (CR-5) from each market (for each of the analysed years) based on the estimation of their involvement:

- the total value of the credit derivative instruments / total average assets and
- the total value of loan sales operations/ total average assets.

Table 4: The characteristics of the most important banks participating on the credits derivatives market and on the loan sales market respectively

	Credit derivatives instruments			Loan sales operations		
	2007	2008	2009	2007	2008	2009
The size of the banks (natural logarithm of total assets)						
Top 5 average	15,453	12,743	14,086	12,971	13,461	13,107
The average of the other banks	12,473	12,137	13,103	12,762	12,862	12,799
T-test value (p-value)	0,000*	0,000*	0,001*	0,051**	0,131	0,143
Diversification of the loans portfolio						
Top 5 average	0,417	0,369	0,403	0,466	0,431	0,415
The average of the other banks	0,367	0,355	0,349	0,371	0,379	0,383
T-test value (p-value)	0,847	0,807	0,691	0,122	0,201	0,396
Geographical diversification						
Top 5 average	0,637	0,602	0,978	0,701	0,578	0,842
The average of the other banks	0,577	0,498	0,477	0,581	0,517	0,631
T-test value (p-value)	0,001*	0,002*	0,004*	0,007*	0,002*	0,089**
Quality of the loans portfolio						
Top 5 average	2,011	2,587	2,461	1,907	2,366	2,572
The average of the other banks	2,003	2,213	1,901	1,832	2,001	2,235
T-test value (p-value)	0,089	0,747	0,933	0,651	0,503	0,378
Capital adequacy ratio						
Top 5 average	13,013	12,257	12,566	12,407	12,887	12,356
The average of the other banks	11,114	11,407	11,532	11,892	10,734	11,277
T-test value (p-value)	0,000*	0,006*	0,002*	0,005*	0,031*	0,057*
Net interest incomes / Total average assets						
Top 5 average	1,413	1,271	1,327	1,403	1,517	1,488
The average of the other banks	1,089	1,077	1,251	1,108	1,107	1,009
T-test value (p-value)	0,327	0,081**	0,157**	0,057**	0,062**	0,071**
Other exploitation incomes / Total average assets						
Top 5 average	1,341	1,402	1,198	1,470	1,361	1,097
The average of the other banks	1,111	1,203	0,741	0,862	0,618	1,289
T-test value (p-value)	0,058**	0,023*	0,001*	0,019*	0,007*	0,081**
ROAE						
Top 5 average	9,973	11,619	16,049	9,128	11,411	16,949
The average of the other banks	8,943	9,891	14,344	7,593	10,107	15,233
T-test value (p-value)	0,057*	0,634	0,506	0,921	0,618	0,519
Deposit run-off ratio						
Top 5 average	19,107	22,043	17,913	27,516	20,118	18,693
The average of the other banks	17,023	18,007	15,411	23,976	14,102	13,258
T-test value (p-value)	0,641	0,567	0,709	0,751	0,232	0,458

* 5% level of statistical significance; ** 10% level of statistical significance.

Source: authors calculations

Afterwards we have calculated the average values for the main indicators that we are using in our analysis for the first 10 banking institutions from each market and we have compared these values with the average values obtained for the other banking institutions from our sample. We have employed a T-test starting from the hypothesis that the two sub-samples are having similar average values for the bank characteristics employed in our research which will imply that the 20 banks from our sample form a homogenous sample (see table 4). The obtained results underline that we were unable to reject the null hypothesis and implicitly the chosen sample of 20 banks is homogenous.

In the second stage this preliminary analysis has been included in a more formal approach regarding the impact of the different bank characteristics on the intensity with which these institutions participate on the loan sales market and on the credit derivatives market. The dependable variables (the ration between the value of the credit derivative instruments and total average assets, the ratio between the total loans sold and the total average assets, respectively) for the two multiple linear regressions undertaken are represented by the estimations made regarding the banks from our sample participation on the previously mentioned markets.

We will present the main results registered regarding the way in which the banks from our panel are using the loan sales operations and the credit derivatives instruments based on the two multiple linear regressions undertaken (see table 5).

Table 5: The impact of the banks characteristics on their operations with credit derivatives instruments and loan sales operations

	Credit derivatives instruments		Loan sales operations	
	coefficient		coefficient	
The size of the banks (natural logarithm of total assets)	12,871*	(0,0372)	-0,076	(0,3678)
Quality of the loans portfolio	-2,407	(0,4121)	-0,001	(0,9177)
Geographical diversification	-0,642*	(0,0531)	-1,472	(0,0023)
Deposit run-off ratio	-0,199	(0,3145)	-0,002	(0,7145)
Capital adequacy ratio	5,6143*	(0,0487)	0,072*	(0,0403)
Net interest incomes / Total average assets	-21,847*	(0,0153)	0,341*	(0,0219)
Other exploitation incomes / Total average assets	35, 741*	(0,0021)	0,246*	(0,0389)
ROAE	-0,178	(0,8214)	-0,007	(0,0962)
Constant	-169,541*	(0,0417)	1,217	(0,4123)
R ²	0,4928		0, 4363	
Number of observations included	37		53	

Note: * 5% statistical significance;

Source: authors calculations

Regression analysis results regarding the usage of loan sales operations

The results from tables no. 4 and 5 suggest that *the size of a banking institution* doesn't affect its loan sale activity. This is way in our case we can't state that there is a reputation effect or the presence of scale economies in the case of loans sales operations market. The geographical diversification appears to be a reason to engage in the sale of loans operations. Thus, our estimations regarding the geographic diversification suggest that geographically diversified banks tend to engage more often in the sale of loans operations than the ones more concentrated geographically. In practice this result is not surprising. It should also be noted that the interpretation of the indicator regarding the geographical diversification could be affected by the fact that the volume of the sold loans may include as well the loans transfers between the different institutions affiliated to the analyzed banking conglomerate. Hence, the loans transfers between the different subsidiaries of the same banking group tend to occur more often as the banking group is more geographically diversified, a case quite encountered in our sample (Demsetz, 2000). *The alternative indicator used to measure the degree of diversification* (total loans granted to the retail clients / total loans) seems not to be correlated directly with the sale of loans operations, despite the fact that the major players in this market seem to be more diversified in this regard too.

The quality of the loans portfolio is negatively correlated, suggesting the existence of a problem like the one existent in the case of the lemon market, but which is not statistically significant.

Regarding the *capitalisation* and the *liquidity indicators*, the results don't indicate if the undercapitalisation of a bank or the lack of liquidity represents or not an incentive for the engagement in loan sales operations. The results regarding liquidity are consistent with the comparative advantage hypothesis, since the banks that face lack of liquidity should sell more loans compared with the banks that

do not face liquidity problems, but in our case the results are not statistically significant. Contrary, the positive and statistically significant correlation recorded in the case of the capitalisation indicator (see table 5) reflects the existence of a reputation effect for the well capitalised banks that are preferred by the loans buyers in order to avoid the possible problems related to lemon markets (Haubrich and Thomson, 1993). Furthermore, according to Cebenoyan et Strahan (2004), in the case of the banks operating within different international markets, because they are usually subject to specific regulations of several agencies of supervision and control, they need to own higher levels of regulatory capital.

As might be expected, the banks that have better credit opportunities are more active on the loan sales market than the ones that have a less profitable loan portfolio. According with the comparative advantage hypothesis, a high value of *the ratio between the net interest incomes and the total average assets* is positively correlated with the participation of a bank on the loans secondary market. Furthermore, the main participants on this market from our sample register a high value of *the ratio between other exploitation incomes and the total average assets*. These evolutions are in accordance with the practice of granting loans with the aim of immediately placing them on the secondary market. With respect to the more general indicator regarding profitability, *ROAE*, there is no statistically significant correlation between it and the intensity of participation in the loan trading market.

Regression analysis results regarding the usage of credit derivative instruments

The results summarized in tables 4 and 5 confirm our expectations on the relationship between the use of credit derivatives and the size of the bank. In accordance with the results of some previous researches (Minton et al., 2006), in the case of our analysis the most active players on the credit derivative market are represented by the largest banks from the sample. Rather unanticipated, the banking groups that have a more *diversified loan portfolio* use more frequently credit derivatives. When the credit derivatives are used to transfer the credit risks of the banking book it is expected a positive correlation between the loan portfolio concentration and the credit derivatives usage. However, in our case, the majority of the credit derivatives transactions come from trading these instruments by large banks that have a sufficiently diversified portfolio of loans.

The quality of the loans portfolio doesn't seem to have a significant impact on the credit derivatives usage. This could be explained through the fact that the most liquid credit derivatives are issued on assets that have been previously evaluated and have received an investment rating, and thus the credit derivatives are not usually used to buy protection for riskier loans. Once more, contrary to the results obtained in previously empirical studies, the credit derivative market is accessed more intensively by *better capitalised banks*. As we have stated before, the explication consists in the fact that the banking groups that operate within different national markets (and which play a dominant role within the credit derivative market), due to the different supervision authorities regulations, are required to usually hold a larger amounts of capital. As it was expected, *the liquidity ratio* doesn't play a significant role in explaining the banking institutions activity within the credit derivatives market, taking into consideration that these tools for risk transfer don't bring additionally liquidity to their user.

The *indicator* regarding the general banks *profitability*, *ROAE*, doesn't seem to be directly related to the intensity of participation of these institutions on the credit derivatives market. On the contrary, the main players on the credit derivatives market obtain significantly lower margins of profit for traditionally intermediation operations and higher margins for non-traditionally operations, this issue being a characteristic of the larger and more diversified banking groups. Once more, these outcomes confirm the practice, according to which the credit derivative transactions are rather used for trading purposes, then for hedging purposes.

5. Conclusions

The empirical analysis undertaken has been based on the activity with credit derivatives instruments and loan sales operations by a sample composed from the major banks located in the European Union for the period 2007-2009. The sample encompasses the largest 20 banking groups from the European Union based on the Bureau Van Dijk Bankscope database data, the undertaken analysis underling the way in which financial innovations are used in practice in the context of European financial integration. The analysis has tested how and why, the intensity with which credit derivatives instruments and loans sales operations used by the major European banks are influenced by the size of the banks, the quality and diversification of the loans portfolio, the capitalisation, the liquidity and profitability of that institution.

The size of the banks seems to be the main factor that influences their operations with credit derivatives instruments, the operations being mostly undertaken for transactional purposes and to a lesser extent for hedging purposes, this outcome being in accordance with the results of some previous researches (Minton et al., 2006). The larger banks, well capitalised and strongly geographically diversified are the main actors on this market. In regard to the loans sales operations, these are undertaken especially by the well diversified banks, that have a high capitalisation ratio and that are having extremely good loaning opportunities, these banking institutions dominating the secondary credit market in the European Union.

6. Acknowledgments

I hereby acknowledge the support of the “Alexandru Ioan Cuza” University of Iasi, in the development of this article through the grant POSDRU/88/1.5/S/47646, entitled “Studii doctorale: portal spre o carieră de excelență în cercetare și societatea cunoașterii”, co-financed through the European Social Fund, within the Sector Operational Programme Human Resources Development 2007-2013.

7. References

- Berger, A.N. et G.F. Udell (1995) Lines of credit and relationship lending in small firm finance, *Journal of Business*, No. 68, p. 351–81.
- British Bankers’ Association (BBA) (2006) *Credit Derivatives Report 2006*, London, September.
- Bank for International Settlements (BIS) (1986) *Recent Innovations in International Banking*, Basel.
- Cebenoyan, A.S. et P. Strahan (2004) Risk management, capital structure, and lending at banks, *Journal of Banking and Finance*, No. 28, p. 19–43.
- Das, S. (2000) *Credit Derivatives: Trading and Management of Credit and Default Risk*, John Wiley & Sons, Singapore.
- Demsetz, R. (2000) Bank loan sales: a new look at the motivations for secondary market activities, *Journal of Financial Research*, No. 23, p. 192–222.
- Dennis, S.A. et D.J. Mullineaux (2000) Syndicated loans, *Journal of Financial Intermediation*, No. 9, p. 404–26.
- Drucker, S. et M. Puri (2007) On loan sales, loan contracting, and lending relationships, *Working Paper 4*, FDIC Center for Financial Research, Arlington, VA.
- Duffee, G. et C. Zhou (2001) Credit derivatives in banking: useful tools for managing risk?, *Journal of Monetary Economics*, No. 48, p. 25–54.
- European Central Bank (ECB) (2004) *Survey on Credit Risk Transfer in the European Market*, Frankfurt am Main.
- Fabozzi, F.J. (ed.) (1998) *Bank Loans: Secondary Market and Portfolio Management*, Frank J. Fabozzi Associates, New Hope, PA.
- Haubrich, J.G. et J.B. Thomson (1993) Loan sales, implicit contracts and bank structure, *Federal Reserve Bank of Cleveland, Working Paper 7*, Cleveland, OH.
- Loan Syndication and Trading Association (LSTA) (2009), *The LSTA Trade Data Study*, New York, February.
- Minton, B.A., R. Stultz et R. Williamson (2006) How much do banks use credit derivatives to reduce risk?, *NBER Working Paper 11579*, Cambridge, MA.
- Pavel, C.A (1989) Loan sales have little effect on bank risk, *Federal Reserve Bank of Chicago, Economic Perspectives*, January/February, p. 23–31.
- Pavel, C.A. et D. Phillis (1987) Why commercial banks sell loans: an empirical analysis, *Federal Reserve Bank of Chicago, Economic Perspectives*, May/June, p. 3–14.
- Pennacchi, G.G. (1988) Loan sales and the cost of bank capital, *Journal of Finance*, No. 43, p. 375–96.
- Saunders, A. (2000) *Financial Institutions Management: A Modern Perspective*, Irwin McGraw-Hill, International Edition, Homewood, IL.
- Thompson, J.R. (2007) Credit risk transfer: to sell or to insure?, *Working Paper 1131*, Queen’s University, Kingston, Ontario, Canada.

THE MANAGERIAL ACCOUNTING - A WAY OF PERFORMING FINANCIAL MANAGEMENT IN ROMANIAN SMALL AND MEDIUM-SIZED ENTERPRISES

SABOU Felicia

Ph. D. Associate professor, Faculty of Economics Sciences, Vasile Goldiș Western University, Arad, Romania, feliciasab@yahoo.com

Abstract: *The paper presents the importance of managerial accounting in small and medium-sized enterprises. In accordance with Romanian Accountancy Law no 82/1991, managerial accounting and cost analyze are compulsory. As a result of some studies it has been ascertained that most companies don't know how to correctly organize their managerial accounting and their system of costs. Specialized studies have revealed the fact that many trading companies who didn't organize their managerial accounting, despite the fact that they had at the beginning a rapid soar, they subsequently entered a decline stage, just because the lack of an adequate managerial accounting system. Within a competition environment expenditure control play a decisive part in enforcing managerial decisions, being a tool in the proper administration of a business.*

Romanian companies which want to organize managerial accounting must elaborate their own researches and to appeal to specialists and survey and accounting consulting companies to adopt and implement an individual model of managerial accounting.

Key words: costs, cost calculation, cost management, managerial accounting

JEL classification: M 41

1. Introduction

Administration accountancy is compulsory according to the Accountancy Law no. 82/1991, the responsibility for its organization belonging to the administrator. The administrator accountancy can be organized either by using specific accounts, or by developing the accounts of the financial accountancy or with the aid of the pertaining technical accountancy. The using of administration accounting accounts as well as their symbolizing has to be done in such a way that the saving and accessing the obtained information is a flexible process which can guarantee a large scale of options. The administration accounts list must be adjusted according to the desired purposes, respectively: the prominence given to the flux costs, the calculation of costs pertaining to stocks, the calculation of incomes and results depending on the generating activity, the undertaking of provisions, etc.

Administration accountancy offers the necessary information for the elaboration of reports and internal analyses, used by firm managers while making decisions. The requirements for the presentation and analysis of the information offered by administration accountancy are not limitative. When organizing the administration accountancy one will ensure that the obtained information satisfies both the existent information requirements and those in perpetual change. The procedures and techniques used in the administration accountancy are established according to the qualitative characteristics of the information requested by the users, as well as to the particularities of the activity under way (Sabou F., 2007).

The accountancy system applied in the Romanian companies is made up of two subsystems: the financial and the administrative accountancy. This structure is a consequence of the general accountancy adaptation to the requirements of a market-oriented economy, requirements meaning to ensure on the one hand the transparency of accounts information necessary to external users, and on the other hand the confidentiality of the data from the internal administration of the company. In the specialized literature, the administration accountancy is also known as managerial accountancy, internal or analytic accountancy or the exploitation accountancy. The information offered by the administration accountancy is exclusively meant for those who ensure the company's management, facilitating them the taking of decisions regarding the proper use of resources aiming to maximize the profit.

Administration accountancy must provide, depending on the type of the activity that is under way, primarily, the recording of operations concerning expenses collection and distribution on destinations, respectively on activities, departments, fabrication stages, cost centers, profit centers, if the case may be, and also acquisition, production, processing of entered and obtained goods, costs calculation, and also of executed tasks and rendered services, of underway production and

immobilizations, in the production, commercial, service, financial units as well as in other domains of activity.

The Accountancy law no. 82/1991 stipulates that 'the commercial societies, national companies/societies, the autonomous administrations, the national research and development institutes, the co-operative societies and all the other juridical persons with a lucrative purpose have the obligation to organize and manage their own accountancy, i.e. the financial accountancy, according to the present law, and the administration accountancy adapted to the specificity of their activity'. The object of administration accountancy is the analytical reflection of certain internal processes of the company which generate qualitative and quantitative changes of the assets. The administration accountancy takes over the expenditure from the financial accountancy, which determines and analyses the result globally, according to the nature of expenses and income.

The administration accountancy is organized by each company according to its specific activities and needs, having the following primary objectives:

- Stock administration
- Estimation of product, service and activity costs ;
- Determination of the results and profitability of the products, services and executed works;
- Elaboration of the income and expenditure budgets on areas of activity;
- Cost and budget control through deflection, necessary for the decision making in the company's accountancy

As stipulated by the Accountancy law no. 82/1991, through the administration accountancy, the companies can obtain information that can ensure an efficient management of the assets, as follows:

- Information related to the cost of the goods, works, services, juridical persons who are actively involved in production, service offers as well as the cost of sold goods for the companies with commercial activities.
- Information that fundament the budget and the exploiting activity control.
- Necessary information for financial analyses having as a goal the strengthening of managerial decisions concerning the internal activity of a company.
- Other compulsory information for a proficient management.

Specific for the Romanian administration accountancy is the fact that the accountancy issues are centered on calculating the costs and analytical results. Also, the administration accountancy model adopted in Romania lacks the stock management objective, which is still realized through financial accountancy.

2. The managerial accounting

The productive activity realized within a firm can be grouped, according to its destination and importance in: basic activity, auxiliary activity and annex activity.

The basic activity forms the main object of activity within the company and consists of the obtaining of final products, intermediates, works and services. It is realized in the main production departments of the company (basic departments). In the administration accountancy these are called main places (centers) of production or of expenditure, of costs, respectively administration.

The auxiliary activity ensures the proper course of events of the basic activity. Within auxiliary activities one can include all the manufacturing of secondary products or the execution of works and services such as: the electrical power plant, the water plant, the steam plant, the maintenance and repairs workshop,, the transport department, etc. the auxiliary production is realized within the auxiliary production departments, departments called in administration accountancy secondary places (centers) of production or of expenditure of costs, respectively administration.

The annex activity is the activity within a company that has no direct connection with the basic activity, having as a goal the fulfillment of some socio-cultural and living needs of the company's employees such as. The obtaining of annex production is realized in annex departments such as the annex agricultural household, the annex dwelling household, etc. In the administration accountancy the annex departments are called secondary places (centers) of production or of expenditure, of costs, respectively administration.

The administration and management of all the activities that take place within the company are realized by the management and administrative department, department that constitutes a distinct place (centre) of expenditure and costs.

In administration accountancy the calculation and recording of expenditure is made on departments and production places, respectively on expenditure places and in continuation on the products manufactured

within the respective departments and places, using specific accounts according to the production type and to the possibilities of identification of expenditure on the level of products or departments (Oprea C., 2001).

Administrative accountancy is influenced, mainly, by the concrete conditions existing in companies belonging to different branches of the national economy.

The most important factors that determine the organization of the administration accountancy are: the company's profile, its organization structure, its production technology and the management methods and techniques.

A certain **activity profile** supposes the establishment of the main activity objective of the company and the orientation of the whole activity towards its realization. The realization of the main objective requires different technological processes varying from one company to another. In administration accountancy, according to the company's profile, (industrial production, constructions, agricultural production, commerce, tourism, etc.) there appear different calculation objects and cost bearers.

The grouping of the production and administrative activity into sectors, departments, workshops and other expenditure places influences the organization of the administration accountancy, mainly in the aspect of cost location and calculation works echeloning. According to the **organization structure** of the firm, there are delineations between the zones (sectors) of expenditure, respectively the responsibility centers.

The zones or sectors of expenditure represent technical and productive, organizational and administrative subdivisions of a company, reported to which budgeting, following and controlling of the activity of the expenditure zone or sector are made. Expenditure zones or sectors can be defined as the reunion of several working or production places.

Production technology (the ensemble of successive operations through which raw materials are transformed in finite products or through which services and works are provided) is an important factor that influences the organization of administration accountancy. From the point of view of technology, the activity of a company can be simple or complex.

Simple production consists either in the extraction from nature of some material goods (minerals, sand, stone etc.) or in the successive transformation of raw materials, the obtaining of the finite product being realized at the end of the last transformation stage (for instance, sugar production). Mass and great scale production are specific to simple production, the manufacturing process being organized as a continuous flux or on great stages.

Complex production comprises the production processes where the finite product is obtained through the assembling of pieces or subassemblies previously manufactured through independent technological processes, taking place in different locations, in parallel. This type of production appears in machine and complex devices manufactories. Specific to complex production are individual production (one of kind items) and the small or medium-sized production. (On small and medium lots)

According to the way of organizing production and the production technology particularities, within the administration accountancy will be established the calculation objects, and taking these into account, the respective calculation methods.

The organization of administration accountancy can also be influenced by the **management methods and techniques** applied within the company. Thus, the company may select a calculation method of total (integral) cost-type or a calculation method of partial cost-type. Also, one can choose a classical calculation method (the global method, the on-stages method or the on-order method), or an evolved calculation method, such as the method of standard or rationed costs, which ensures the accentuation of the prevision character and an increase in information operability (Sabou F., 2005).

When organizing administration accountancy and the cost calculation the following principles must be taken into account:

- The principle of delineation in time of exploitation costs – which assumes that to each administration accountancy period correspond only the costs pertaining to the activity cost calculation is made for ;
- The principle of delineation in space of exploitation costs – supposes de delineation of exploitation costs on areas of activity (manufacturing costs proper – in basic and auxiliary sectors, administration and retail expenditure) and on production departments, workshops, technologic lines, responsibility centers, both in pre-calculation and in post-calculation ;

- The principle of cost separation implies the separation of exploitation expenditure from the other expenditures (financial and extraordinary). Financial expenditure (excepting the interest payments on loans for units with long-time span manufacturing) and extraordinary expenditure are not included in the production cost and is not the object of administration accountancy.
- The principle of delineation of under-activity costs – envisages the delineation and the evaluation of expenditure generated by production inferior to normal-capacity production. The under-activity cost, as a rule, is not included in the price of the product, but is directly reflected in the result of the exercise ;
- The principle of delineation of finite products expenditure and underway production expenditure – it implies the exact determination of unfinished production, in order to calculate correctly and exactly the real costs for finite products (Oprea C., 2001).

3. Research Methodology

The purpose of this study is to find if the small and medium-sized enterprises give due to the managerial accounting and calculate the cost price of their products or services. The research was based on a questionnaire and was conducted on a sample of small and medium-sized enterprises from Maramures County. The questionnaire included questions about managerial accounting and there were open questions and closed questions in the questionnaire.

4. Conclusions

In two different period (in 2007 and in 2011) we conducted a survey in small and medium-sized enterprises in Maramures county, on the way in which these organize, accomplish their managerial accounting and calculate the cost price of their products or services.

Through this study I wanted to answer the following question:

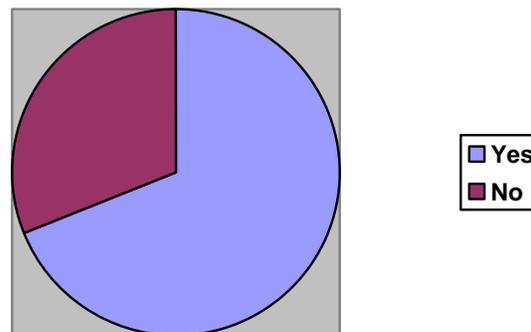
- How many small and medium sized enterprises in Maramures county give due to the managerial accounting and calculate the cost price of their products or services.

The research method adopted in order to gather data concerning the accomplishing the administration accountancy within small and medium-sized enterprises in Maramures County was the survey based on a questionnaire.

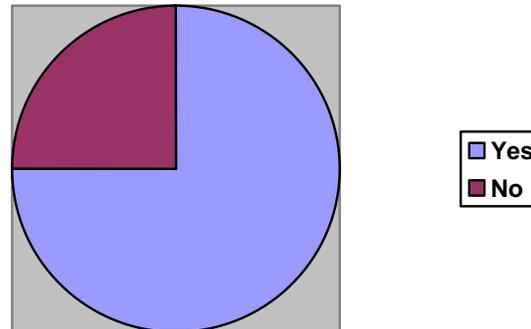
After assessing the gathered data the following conclusions were drawn:

- Out of the questioned enterprises, only 68,62% calculate the cost price for their products and services, in 2007.

Figure 1: Cost calculation in 2007



- Out of the questioned enterprises, only 75.44% calculate the cost price for their products and services, in 2011.

Figure 2: Cost calculation in 2011

From the studies and observations made till now I have noticed that Romanian small and medium-sized enterprises from Maramures county, are not enough prepared to implement correctly costs system calculation and also managerial accounting. Taking into account the importance of correctly and exactly calculating the cost price for products and services realized in enterprises, I believe that a great percentage of the small and medium-sized enterprises in Maramures county that were interviewed, are exposed to the risk by not correctly knowing the costs with which their products and services are realized (31, 38%). Romanian companies which want to organize managerial accounting must elaborate their own researches and to appeal to specialists and survey and accounting consulting companies to adopt and implement an individual model of managerial administration accounting.

It is important to notice the improvement of the number of small and medium-sized enterprises which calculate the cost price for their products and services in 2011, compared with 2007.

5. References

- Byrne S., Pierce B., (2007) *Towards a More Comprehensive Understanding of the Roles of Management Accountants*, European Accounting Review, vol. 16, number 3.
- Oprea C. ,(2001) *Managerial Accounting*, Tribuna Economica Publishing House, Bucharest, 2001
- Seal W., Garrison R. H., Noreen E. W., (2009) *Management Accounting*, McGraw-Hill, Maidenhead.
- Sabou F., (2007) *Managerial Accounting*, Risoprint Publishing House, Cluj-Napoca, 2007.
- Sabou F.,(2005) *The Costs. Their Emphasis in Managerial Accounting*, Risoprint Publishing House, Cluj-Napoca, 2005.
- Sabou f., (2008), *The administration accountancy in romanian small and medium-sized enterprises*, Proceedings Of The Iabe International Academy Of Business And Economics 2008 Stockholm, vol. Iv, nr. 1, 2008, Issn 1932-7498 (1932-748x), p.137-141.
- Zimmerman J. L., (2006) *Accounting for Decision Making and Control*, McGraw-Hill, Maidenhead.

FINANCIAL INSTRUMENTS USED TO INCREASE THE ABSORPTION OF EU FUNDS BEFORE AND AFTER EU ACCESSION, IMPORTANT INFLUENCE ON ROMANIAN AGRICULTURAL POLICY

SASU Georgică

Ph. D. Student, Faculty of Animal Science, University of Agriculture and Veterinary Medicine, Bucharest, Romania, georgica.sasu@yahoo.com

IONCEF Cezar-Săndel

Main Inspector, General Directorate of Public Finances of Cluj-Napoca Municipality, Cluj-Napoca, Romania, cezar_ioncef@yahoo.com

Abstract: *The objectives of agricultural policy underwent massive reconsiderations in the two decades covered in 1989, when Romania finally opted for Euro-Atlantic integration. Agriculture situation caused synergistic / antagonistic between the financial instruments used and the strategic objectives of agricultural policy, requiring correction. In the present paper describes the financial schemes of public funds, the legislative mechanism of action, results and their influence in the period 2005 to 2011. Determinations findings help identify directions for action in agriculture and rural development in the medium and long term development proposals for the CAP from 2014 to 2020.*

Key words: financial instruments, public funds, agricultural policy, strategic objectives

JEL classification: A 12, A 13, B 15, G 28, Q 10, Q 18

1. Introduction

Romania has a widely recognized agricultural potential at the level necessary to ensure agricultural production for a population of about 80 million. Because of varied terrain, hydrological and climate, agricultural production structure is varied and complete, it can grow and grow most plants and domestic animal species. The role and place of the Romanian agriculture to national and European level cannot be determined without knowing the steps taken in different social and economic systems. The current development is the direct result of these steps.

The situation of agriculture and the countryside in Romania, after 1989, when Romania finally opted for a democratic political system and market economy is characterized in economic terms a chronic disinvestment, investment appetite of private banking and financial sector dropped obsolete means of production and 70 percent physical and 95% dissolution crumbling state and cooperative property. In a comparative table can cause problems and challenges that the state needs to address the national agricultural policy[1].

Table 1: Agriculture situation before and after 1989

In Romania the modernization of agriculture coincided with the communist totalitarian regime, land reform has coincided with the abolition of land ownership. It is therefore particularly interesting comparative analysis of the evolution of the following periods:		
Before the 1989-ie		After 1989-chaos
Land ownership and farm structures	Agricultural reform, nationalization, forced collectivization completed in 1962, peasants become employees of collective farms or perform basic work rules. Properties remain in the mountain peasant ignored and tolerated by the authorities.	Changing the political system in 1989 marked a fundamental turning point in Romanian agriculture. The foundations of a democratic state based economy market economy. Constitution recognizes and guarantees private property. It requires a repair to inequalities generated by cooperatives.
	It implements the socialist economic system, collective ownership of land, abolition of the peasantry, the final establishment of the working class in agriculture.	Law no. 18 of February 19, 1991 reconstituted the ownership of land were returned to land owned by CAP -s and IAS's owners.

	<p>Agricultural land forcibly merged, crop rotation intensively exploited large areas, and large farms producing centralized economy, vegetable farms and large livestock, thousands of hectares of land and hundreds of thousands of animals (birds and pigs) thousands of cattle. Agricultural production is done according to plan centrally imposed the production, resource allocation, consumption and costs at the central level.</p> <p>Modernization of agriculture is made unidirectional and uneven first to build or modernize major objectives are implemented technologies operating on the other hand the CAP - sites remain inefficient or obsolete technologies with low productivity and efficiency.</p> <p>Romania initially kept contact with the Western world in agriculture are still important modern animal breeds, specialized plant and modern technology. Recorded after 1980 but a decline in real terms due to the increase of Romania's isolation from the West</p>	<p>Restructuring of agricultural property and production, upgrading, the transition to democratic political system and market economy, price liberalization, the collapse of industrial production auxiliary agriculture, rural areas have caused chaos in Romanian. The privatization process took place sometimes opaque, crossing privately owned farms meant the often change their destination, the abolition of the holding. Arose a large number of subsistence farms and small and medium-sized private farms or state without a coherent and without any prospect of development of market economy. Romania has the largest number of farms in Europe. Were imposed in Romanian agriculture in recent years transnational companies that produce hybrids of plants and animals, machinery or equipment for agriculture and livestock, or processed agricultural products. Imported plant varieties, species, animal breeds and hybrids of performance, but sufficient numbers to influence the agricultural production and discouraging domestic production of biological material for selection and improvement for livestock development and varieties of native plants.</p>
agricultural production	<p>Although production levels recorded in the most modest holdings are reported very high production scripting, unduly to climatic conditions and specific genetic and technological potential of species of agricultural interest and existing livestock. Preferential allocation of resources generates large differences in production levels, even holding the same climatic zone. Losses are also noted "technology" for the most part ignored by the authorities that distorts the production quality and quantity.</p>	<p>The agricultural production has dropped dramatically, there were large variations from year to year "in saw tooth". Climate change in recent years, low rainfall, irrigation abandonment, intensive and generated a bad collapsing agricultural and livestock production in the first years after 1989.</p> <p>Quality is an increase of agricultural and livestock products but they still fall below the European standards in terms of appearance and commercial potential, in terms of taste, however, are far superior.</p>
infrastructure and technology	<p>Agricultural and livestock buildings are standardized, one-way industry develops without creating alternative lags behind technological progress. The great work done by systematic planning, dams, drainage, facilities (terracing, improvements torrents) are given in the areas set aside large areas unsuitable for agriculture (flooded areas, sand, slopes, wooded areas). It built a vast irrigation system on about 3.5 million hectares, intensive and turned out a bad economy.</p> <p>Since 1980 the investment process is slow, unconventional solutions are used increasingly to replace facilities to cheaper imported technologies are adapted to growth and operational needs exponential growth in production over production quality and comfort achieved minimum operated animals .</p>	<p>Between 1989 and 2000 is very difficult for agriculture. Land restitution program launched in 1990 by abolishing collective farms and state farms then was not followed, unfortunately, a program to support development of new production structures (family farms, farm associations) based on private, a program of investment in new production means, organization and regulation of food markets based on market principles.</p> <p>Farms suffering chronic lack of facilities and technology.</p> <p>Infrastructure is lagging behind, most of the works of improvement are small areas are abandoned or destroyed infrastructure projects started earlier with some exceptions. Irrigation system is proving costly, ineffective given that holdings which was built no longer exists, currently used in about 10% capacity.</p>
strategy-farming economy	<p>State agriculture and cooperatives have been targeted, priority is increasing the production sector is represented by households mostly ignored, agriculture and livestock suffer a process of industrialization in the means of production. At first it invests heavily, using quality equipment and materials.</p> <p>After 1980 the agricultural sector felt the full financial burden of external debt of Romania and support megalomaniacal projects started during this period. Plan is developed aberrant rural systematization in urgent need to recover more and more agricultural areas.</p> <p>Agricultural production is exported mainly to the relationship with traditional partners (mostly members of CMEA) and the countries of Western Europe or America. Exporting is often encouraged not to take account of production costs, labor productivity or social or environmental costs.</p>	<p>Investments sporadic, public funds are allocated based on transparent rules, funds are virtually settled largely in the "black hole". Romania has built its strategy of agricultural development soon after decided to implement land reform in 90 years. Land reform was not immediately followed by reform of the structures of agricultural production, contributing to the organization of viable, were not defined instruments to support agricultural, no organized markets for agricultural products (rules and norms marketing, pricing from producer to consumer to ensure the consumer price stability and the income for farmers)</p> <p>In the '90s Romania could still have its own tariff policy. Since this opportunity was missed, Romania now has no freedom of the '90s and must compose an agricultural policy based on some data variables that are contained in the Common Agricultural Policy (CAP) in Europe.</p>

Education research	Education and agricultural research are adapted socialist economic system. Romanian specialists initially receive thorough theoretical and practical training. Allocated significant funds to construct or establish specific institutions. Agricultural education experiencing a great development, are trained professionals and workers in agriculture and animal husbandry, food industry and adjacent industries. Network provides a national education and higher agricultural, are formed and trained teachers internationally outstanding, are notable progress on obtaining efficient plant varieties, animal hybrids, technologies of plant breeding and exploitation of animals. Then towards the end, international isolation imminence of radical change, generates a setback especially in terms of quality in this area.	Field with the largest decline in this period. In early research is in freefall, the rush restitution radical change of perspective on the farm, unhappy association between agriculture and tradition, the need for subsequent repair totalitarian abuses of property and rural areas generated indecision and inconsistency on the field. Education reform, the need for training of specialists trained to organize production in small farms with uncertain or improvised technology, in competition initially destabilized agricultural education in this direction have been most detrimental to research recovery efforts. Entering final hybrids imported livestock need to offset short-term genetic progress, but has created a negative pressure on the Romanian system of genetic improvement, selection and improvement of local being underrepresented.
Social impact	Workers in agriculture is very heterogeneous, rural areas suffer major changes, systematic, forced industrialization, depopulation, poverty, forced urbanization. Otherwise rural rich is an option increasingly rare youth, attracting rural population in urban areas almost depopulating villages. Agricultural labor intensive employment uses, although declarative working conditions in agriculture are harsh, the often poorly paid. Confidence in the Romanian agricultural products decreases, dissatisfaction persists rural collectivization, disinterest in technological and scientific progress, there is empirical agricultural production, parallel in inappropriate spaces (courtyards, areas around the blocks, etc.). Social tension builds rural areas and urban areas contributing to the explosive events of 1989	Currently about 3.6 million people are active in the Romanian agriculture, representing 34.7% of the workforce. In addition residents of rural areas are always those who shifts from agriculture to other industries restructure. Confusion between tradition and peasant farming (almost involuntary tendency to associate costume and folk music activities in rural areas and work in agriculture and livestock), social and psychological issues customize the field. The focus is on work and family at work in agriculture. Possibility of recovery of consumer perception of quality superior taste Romanian agricultural products. Areas are at greatest advances, many villages and towns were renovated and modernized. Romanian villages reconstruction strategy is the most consistent. Standard of living of the rural population increased continuously from 1989 until now, being still well below European levels, especially in terms of infrastructure and equipment to utilities.

Romanian agriculture is currently facing the global economic crisis, the challenges of merging the agricultural areas in need effective holdings in size and form associations, rejected the active population in the area, amid chronic shortage of domestic capital, social tensions related to the possibility of selling agricultural land by foreigners and the consequences of a process of restitution of property held by large delays and errors. To this, add the specific problems of capitalism in agriculture due to dissolution of state authority, incomplete and ineffective decentralization, outsourcing most of the regulation and control levers. Make their presence felt specific tendencies that market economy: the tendency to maximize the benefit obtained at the expense of quality production, environmental protection, animal welfare and comfort of human nutrition, use of means of production tend cheap, poor quality work force that can be poorly paid, the downward trend of interest to manufacturers of consumer health. In this context, state authorities have a huge responsibility towards the development and implementation of agricultural policy measures to correct[2].

8. Financial instruments analyzed

Starting 2000, the European Union supports EU candidate states from Central and Eastern Europe in their efforts to prepare for accession by three financial instruments: PHARE and ISPA and SAPARD programs. Post accession Romanian agriculture and rural development is financed by the EAFRD. European Agricultural Fund for Rural Development (EAFRD) is a created by EU funding to support member countries in Agricultural Policy implementation Commune. EAFRD funding is an opportunity for Romanian rural space in worth about 7.5 billion Euros, from 2007 until 2013.

Table 2: Pre and Post accession EU Financial Instruments

Since 2000, the EU supports the candidate countries of Central and Eastern Europe in their efforts to prepare for accession by three financial instruments: PHARE, ISPA and SAPARD		
Instrument/Domain	Period	Field of action
PHARE	1090 -	Poland and Hungary transition support

<ul style="list-style-type: none"> • Institutional development; • Investments to support application of Community law; • Investment in economic and social cohesion. 	1996	
	1996 – 2000	13 states received grants PHARE
	2000 - 2004	Supporting the process of accession of the 10 candidate countries of Central and Eastern Europe.
ISPA (Instrument for Structural Policies for Pre-Accession)	2000 - 2006	The program aims to align the candidate countries to EU environmental standards
SAPARD (Special Pre-Accession Program for Agriculture and Rural Development) Axis 1: Improving competitiveness of processed agricultural and fishery products Axis 2: Improving rural infrastructure and agricultural development Axis 3: Economic development of rural areas Axis 4: Developing human resources	2000-2006	Supports Romania for participation in the Common Agricultural Policy (CAP) and the European Union's Internal Market. More specifically, the program objectives are: improving the lives of rural communities, creating a competitive sector producing and processing agricultural products, creating jobs in rural areas, providing adequate income of rural residents and ensuring sustainable development of these regions.
Post accession Romanian agriculture and rural development is financed by the EAFRD		
National Rural Development Program is the document which can be accessed on the European Agricultural Fund for Rural Development and meeting the strategic guidelines of the EU rural development;	2007 - 2013	Program priorities, resulting in four areas (axes) are: Axis I "increase the competitiveness of agriculture and forestry" - 45% of the total EU funds, an amount of EUR 3,246,064,583; Axis II Improving the environment and rural areas "25% of EU funds in the amount of EUR 1,805,375,185; Axis III "Quality of life in rural areas and diversification of the economy Rural - 30% of European funds, totaling the amount of 2,046,598,320 euro; Axis IV "Leader" will receive 2.5% of the amounts allocated to other areas, ie EUR 123 462 653.
From 2014 through the new CAP will regulate agricultural policy measures applied in Romania, the European Union in terms of agricultural policy will go into a new stage, there is a timetable for carrying out negotiations.		
2010 		
CHALLENGES		SOLUTIONS
EUROPE 2020		
ECONOMIC	A sustainable food production	COMPETITIVENESS

♣ price volatility ♣ Food Safety ♣ The economic crisis	<ul style="list-style-type: none"> - Contributions to the agricultural income of farmers - Improving the competitiveness and its share in value added food chain - Provision of compensation regions subject to natural constraints 	<ul style="list-style-type: none"> - More effective marketing tools - Reserve crisis - Farmers are stronger in the food chain - Research + innovation + knowledge transfer +FAS
ENVIRONMENTAL	Sustainable resource management	IMPROVED DURABILITY
<ul style="list-style-type: none"> - Emissions of greenhouse gases - Erosion and soil degradation - Water quality and air - Habitat and Biodiversity 	<ul style="list-style-type: none"> - Ensuring the provision of public goods - Stimulating green growth through innovation - Further mitigation and adaptation 	<ul style="list-style-type: none"> - Greening the P1 - Stronger conditionality on climate change - Environmental priority in P2 - Research + innovation + knowledge transfer + FAS
TERRITORIAL	Balanced territorial development	EXTENDED EFFICIENT
<ul style="list-style-type: none"> - Vitality of rural areas - Diversity of EU agriculture 	<ul style="list-style-type: none"> - Support for rural areas - To promote job creation - Promoting diversification - Acceptance of social and structural diversity of rural areas 	<ul style="list-style-type: none"> - Redistribution of direct payments - New system of direct payments - Common strategic framework for EU funds - Simplifying the CAP
Pillar 1		Pillar 2

The SAPARD pre-accession EU-funded, was the first major program of structural policy, which contributed significantly to the restructuring of agriculture. SAPARD is the third instrument of EU financial assistance for the candidate and member states of Central and Eastern Europe in 2000-2006. It supports these countries in preparing for participation in the Common Agricultural Policy and the Internal Market and the specific problems of agriculture and rural development. SAPARD was originally created for the 10 candidate countries in Central and Eastern Europe. Since 2004, when eight of them became members, have received assistance SAPARD Romania and Bulgaria. Funds allocated annually to Romania through this program was 162 million. The program is implemented nationally through the National Plan for Agriculture and Rural Development (NPARD) in accordance with principles used by Member States, each reflecting national priorities within the limits set by Regulation SAPARD.

Eligible activities. Under Regulation SAPARD were included in NPARD following measures: investment in agricultural holdings, improving production and marketing of agricultural and fishery products, improving quality and health standards for animal and vegetable products, production methods considering environmental protection and landscape conservation, development and diversification of economic activities, creation of groups of farmers, creation of support services and farm management, renovation and development of villages, protection and conservation of rural heritage, improve quality and re-parceling land, creating and updating of land, water resources management, development and improvement of rural infrastructure, forestry measures, including a forestation of agricultural areas, investment in private forest holdings and processing / marketing of forest products, improving training, technical assistance, including studies to help prepare and program monitoring and publicity efforts.

Areas of funding. In Romania, in 2000-2006, according NPARD were financed projects in the following areas:

Axis 1: Improving competitiveness of processed agricultural and fishery products:

- 1.1 Improving the production and marketing of agricultural and fishery;
- 1.2 Improving quality and health standards of plant and animal products;

Axis 2: Improving rural infrastructure and agricultural development:

- 2.1 Development and improvement of rural infrastructure;
- 2.2 Management of water resources;

Axis 3: Economic development of rural areas:

- 3.1 Investments in agricultural holdings;
- 3.2 The establishment of groups of farmers;
- 3.3 Production methods that take into account environmental protection and nature conservation;
- 3.4 Economic Diversification;

3.5 Measures forest;

Axis 4: Development of human resources:

4.1 Improving training;

4.2 Technical assistance, including studies to help prepare and monitor the program and advertising efforts.

SAPARD was a pre-accession co-financing of investment activities, works and services in agriculture and rural development and worked on the principle of reimbursement of expenses made by the beneficiary under the contract. Often applied at random or in any case, lacking coherence, absorption due to rush at all costs, this program has generated the first national agricultural Strategy after 1989, the financially feasible. Were necessary national measures to create the framework and conditions for effective absorption of the support.

Post accession Romanian agriculture and rural development is financed by the EAFRD. European Agricultural Fund for Rural Development (EAFRD) is a created by EU funding to support member countries in Agricultural Policy implementation Commune. EAFRD funding is an opportunity for Romanian rural space in worth about 7.5 billion Euros, from 2007 until 2013. Similar to the SAPARD program, the EAFRD is based on the principle of co-investment project grant public / or private funds are allocated and developed by the National Rural Development Plan (RDP). Is given to an advance of the eligible project contractor and the contracting beneficiaries are not required to provide proof of financing their contribution. difficult problems persist in applying NRDP appetite investment in agriculture and rural areas of the banking system in Romania is still very low, missing or guarantees are agreed in the credit, the beneficiaries access to home financing - up is virtually impossible projects submitted and the contract can not be achieved due to lack of funding their own absorption rate than the support is still insufficient, given the advances cannot be accessed due to lack of letters of guarantee for repayment of the advance in favor of APDRP, absolutely necessary to secure European funds . Add to the market instability problems caused by economic crisis and recession in the years 2008, 2009, 2010 and even 2011.

The programs support pre and post EU accession Romania used a variety of instruments and financial schemes of public funds with private financial system involvement. Mainly we used three types of financial instruments: credit investment instruments, to guarantee loans for investment, production or guarantee advances from European funds, or amounts representing direct payments set by the CAP.

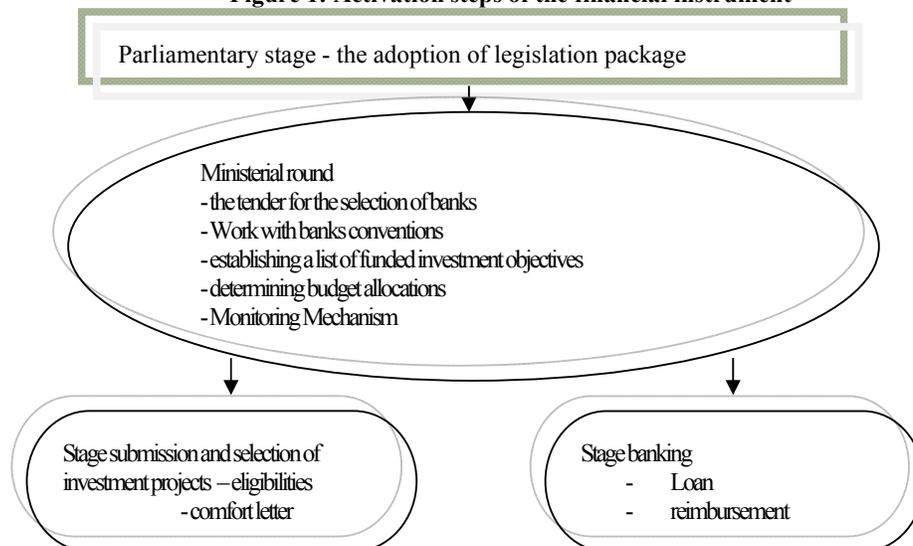
Although the legislative harmony with the European Union, financial and accounting of funds allocated unfolding mechanisms are created, the absorption rate is very low until 2005, Romania risking losing significant funds, with effects hard to predict the long term. Are first national financial instruments designed to combat the difficulties of reform and modernization process of agriculture and the countryside. In the present work are explained and systematized these tools and determine their influence on the strategic objectives of national agricultural policy[3].

2.1. Credit instruments (Farmer program)

The first instrument of this category was called "The Farmer" and has been implemented since mid 2005, effectively implemented between 2006-2009, such loans contracted are currently underway. Is the most powerful instrument of its kind in Romania created with public funds for SAPARD was an absolute record of absorption, the launch were contracted in only two months and required all amounts allocated to supplement the funds allocated from European funds with about 500 million USD. public funds used for the entire period ca. £ 580 million allocated financial institutions selected title loan which were granted loans amounting to approx. 1 billion lei. The amount so absorbed in European funds is about. 2.5 billion Euro. Institution responsible for implementation is the Ministry of Agriculture and Rural Development, the central public institution which was available was "lending fund investments in agriculture, forestry, fishing, and agricultural activities" Farmer program was implemented through a package comprising the following acts;

Law no. 231/2005 on stimulating investment in agriculture, food industry, forestry,

fishing and non-agricultural activities; Decision no. 934/2005 approving the Methodological Norms for applying Law no. 231/2005 on stimulating investment in agriculture; Order no. 979/2005 approving the list of investment objectives and the maximum credit to be granted in 2005 under Law no. 231/2005 on stimulating investment in agriculture, as amended; Order no. 100/2006 approving the list of investment objectives, technical criteria provided and the maximum credit to be granted in 2006 under Law no. 231/2005 on stimulating investment in agriculture, with subsequent amendments; Government Decision approving nr.759/2006 Sheets of measures 1.1 "improve the processing and marketing of agricultural and fishery products", 1.2 "structures to achieve improved quality control, veterinary and plant health, food quality and consumer protection" 2.1 "Development and improvement of rural infrastructure", 3.1 "Investments in agricultural holdings", 3.2 "Setting up producer groups", 3.3 "agricultural production methods designed to protect the environment and maintain the countryside", 3.4 "Development and diversification of economic activities generate multiple activities and alternative income ", 3.5" Forestry ", 4.1" Improving vocational training "and 4.2" technical assistance "of the national Programme for Agriculture and Rural Development funded SAPARD; Government Emergency Ordinance no. 59/2006 on insurance from the state budget co-financing of public grants for investment projects under the SAPARD Programme; Decision no. 1644/2006 approving the Methodological Norms of Government Emergency Ordinance no. 59/2006, as amended and supplemented; Law no. 473/2006 approving Government Emergency Ordinance no. 59/2006; Decision no. 1645/2006 to reduce the level of the total amount repayable loans to the Law no. 231/2005 on stimulating investment in agriculture, vary by type of investment project for 2006 and amending the Methodological Norms for applying Law no. 231/2005 on stimulating investment in agriculture, approved by Government Decision no. 934/2005; Order no. 820/2006 approving the list of investment objectives and technical criteria for granting credit in 2007, under Law no. 231/2005 on stimulating investment in agriculture; Ordinance no. 31/2007 regarding certain financial measures to stimulate the absorption level of funds under SAPARD; Emergency Ordinance no. 72/2008 on authorization of the Ministry of Agriculture and Rural Development to complete the domestic legal commitments in 2008 to provide financial measures for the implementation of Law no. 231/2005 on stimulating investment in agriculture, food industry, forestry, fishing and non-agricultural activities; Order no. 430/2008 for approval of investment types and maximum amounts of loans to be granted in 2008 under Law no. 231/2005 on stimulating investment in agriculture, food industry, forestry, fishing and non-agricultural activities, with subsequent amendments; Order no. 40/2009 to establish detailed rules for implementing measures under the National Rural Development Programme and Operational Programme for Fisheries in the application of the commutation of aid, with subsequent amendments; Order no. 102/2009 for approval of investment types and maximum amounts of loans to be granted in 2009 under Law no. 231/2005 on stimulating investment in agriculture, food industry, forestry, fishing and non-agricultural activities, as amended;

Figure 1: Activation steps of the financial instrument**Table 3: Projects submitted in the action until June 31, 2006 (deadline for submission of projects).**

No.	Measure	Number of submitted projects	The total eligible amount stated in the application EURO	Value comfort letter
1	1.1	108	163,379,684.04	53,823,784.74
2	3.1	833	150,952,290.14	81,787,513.33
3	3.4	76	8,171,995.74	4,822,191.67
TOTAL MEASURES		1017	322,503,969.92	140,433,489.73

Table 4: Statement of percentage of number of projects and the amounts used to work ceiling Conventions signed in 2006 with credit institutions selected by tender according to Law 231 / 2005

Amount used Ron	% of total amount allocated by the Convention	Projects submitted	% achieved
584,338,491.83	89,76	1017	95,08

Because the value of public co-financing grants for investment projects within the SAPARD submitted by 31 July 2006 exceeded the fund allocated to Romania through this program was necessary to issue a bill which has been allocated to 1350.0 million lei, the state budget, public co-financing grants to cover, namely the Government Emergency Ordinance no. 59/2006 regarding the insurance from the state budget grants to public co-financing investment projects within the SAPARD.

Direct investment projects eligible for grants of up to 50% of their value, depending on the objective, to repay the loan.

Financial analysis for granting letters of comfort and loan takes into account the internal rules of lending by banking institutions, subject to conditions imposed by MARD on the life of the loan (up to 10 years), grace period on repayment rates (up to 5 years - depending on the type of investment project), the maximum interest rate of 5% per year (rate of interest charged by the bank was the selection criteria laid auction procedure). This credit program based on Law no. 321/2005 was a success for providing private financing for investment projects secured in 2006 through the SAPARD program. Although it was extended in 2008 and to finance projects submitted by the RDP being allocated significant amounts (720 million), has never enjoyed the same success because the obligation of Romania as a EU member state to observe the intensity of public support given for investments. Status credit loans through the program developed under Law no. 231/2005 is presented in Table no. 5

Table 5: Their loan granted under Law no. 231/2005 at 5 years from grant (half period)

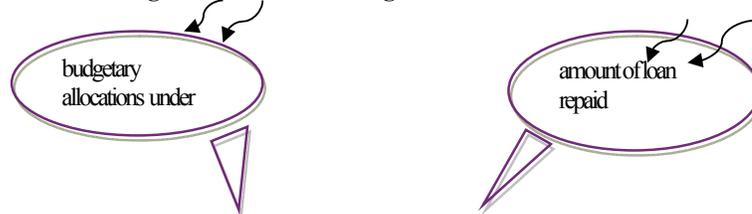
2006-2008 Program -million			
Bank	Allocated	Utilized	Reimbursed
BCR 2005	30,00	29,96	13,82
BCR 2006	478,5	432,33	170,99
CEC BANK 2006	37,50	34,82	20,39
BRD 2006	75,00	63,72	33,16
CARP SIBIU	30,00	30,00	13,63
Total	651,00	590,82	251,99
%	100	90,76	42,65

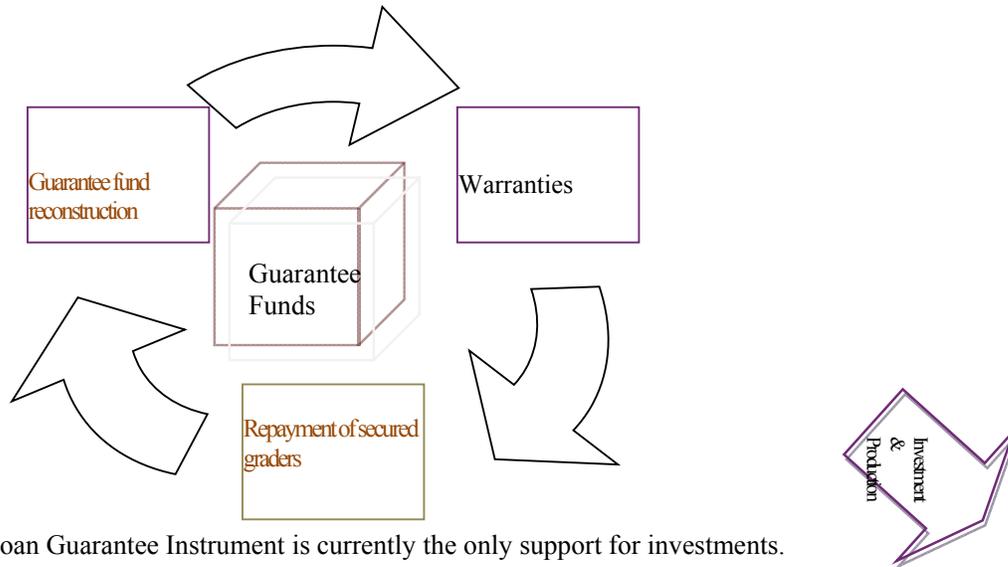
2.3. Credit instruments (Farmer program)

The second tool created to increase the absorption of EU funds is to guarantee loans through guarantee funds granted by the limits of public funds allocated by MARD. The legal basis to guarantee instrument is established by Law 218/2005 stimulate absorption of SAPARD funds, the European Agricultural Fund for Rural Development, the European Fisheries Fund, European Agricultural Guarantee Fund, the assumption of risk by credit guarantee funds, GEO. No. 79/2009 regulatory measures to stimulate the absorption of funds under National Rural Development Programmer for renewal and rural development by improving the quality of life and economic diversification in rural areas and Law No. 329/2009 on the reorganization of public authorities and institutions, rationalizing public spending, business and compliance support framework agreements with the European Commission and International Monetary Fund. Less spectacular this instrument consists of taking a risk by guarantee funds. Law 218/2005 regulates the credit guarantee fund for projects under the SAPARD program and arrangements for the allocation of amounts to FGCR and FG-SME, to create the necessary collateral lending. Ensuring the security of up to 100% if FGCR and 70% for FG-SME access to EU funds create the premise for investment where there are insufficient guarantees or the beneficiaries.

Similar instrument was set up credit "credit guarantee fund" under Law no. 218/2005, the budgetary allocations. This fund has been allocated funds by conventions guaranteeing the amounts needed to work up the coverage level, conditions were established for the granting of guarantees and the amounts allocated exposure (maximum exposure for all funds is 1 / 5). The Fund was reconstituted in amounts corresponding redundant as a result of diminishing credit guarantees were repaid and reused to issue new securities. The Fund was reconstituted in amounts corresponding redundant as a result of diminishing credit guarantees were repaid and reused to issue new securities. From 1 January 2010 the Law no. 218 could not have applied, Law no. 218/2005 being in the category of normative acts governing State aid to the accession of Romania and have been replaced partly by GEO no. 79/2009 (in terms of guaranteeing the APDRP advance received by the beneficiaries of public investment projects submitted as 322 of the RDP) and Chapter VIII of the Law no. 329/2009 (short-term guarantees for loans / credit lines for selling agricultural).

Figure 3: Instrument to guarantee scheme





Loan Guarantee Instrument is currently the only support for investments.

Table 6: Briefly, the situation guarantees granted for SAPARD co-financing projects is as follows

<i>Explication</i>	<i>Nr. beneficiary</i>	<i>Value guarantees lei</i>	<i>Value of secured loans</i>	<i>Average Percent Guarantee</i>
<i>Guarantee Contracts</i>	1250	738.231.486,25	1.034.263.339,18	71,38%

Table 7: Volume guarantees granted requests according to commercial banks are as follows:

<i>Explication</i>	<i>Value of guarantees -mil. lei</i>	<i>%</i>
Total guarantees given for the SAPARD program, in which:	738,23	100,00
Banca Comercială Română SA	440,54	59,68
BRD – Groupe Soci�t� G�n�rale SA	175,59	23,79
CEC Bank SA	27,77	3,76
Bancpost SA	46,76	6,33
Bank Leumi SA	1,98	0,27
Banca Italo-Rom�na Spa	0,24	0,03
Banca Transilvania SA	23,66	3,20
Banca Comercială „Carpatica” SA	21,34	2,89
ATE Bank	0,35	0,05

Among the guarantees granted until they completed 504 by 31.12.2010 guarantees totaling 290,470,370.94 lei, the ceiling being reused properly disbursed to issue new securities

Table 8: Briefly, the situation guarantees provided for co-financing EAFRD is as follows:

<i>Explication</i>	<i>Nr. beneficiary</i>	<i>Value guarantees*)</i>	<i>Value of secured loans*)</i>	<i>Average Percent Guarantee</i>
Contracte de garantare	405	729.094.142,03	832.854.844,35	87,54%

*) including letters of guarantee for commercial banks or APDRP

3. The influence of financial instruments described on national agricultural policy

The two types of financial instruments and credit guarantee synergistically causing unexpected effects. Their estimate presupune data collection and processing statistics on indicators follow them finally obtained deviation from the mean time and previous indicator values from implementation scheme which is a result of the synergistic action of financial schemes. Thus the total effective indicator of cattle influence of the two instruments over the years from 2005 to 2010 can be precisely quantified. their influence has decreased the total number of cattle in Romania with about 700 000 (36.38%) head in real terms and about 1500.000 (54.80%) head to the horizon expected by agricultural policy measures promoted.

Table 8: Influence of financial instruments used for Increasing the absorption of total cattle and beef production in the period 2005 - 2010

SPECIFICATION	UM	2005	2006	2007	2008	2009	2010	2011
Total actual cattle	Th/ head.	2862	2934	2819	2684	2512	1.985	2.130
Total beef production in living	tons	383	318	333	306	264	205	289,3
Average weight at slaughter	kg /h	333	275	280	285	287	264	333
Projects submitted and financed by the loan scheme farms	Nr.	24	86	40	30	30	8	0
Projects guaranteed farm	nr	12	100	83	86	70	70	48
Projects submitted and financed by the loan scheme abattoirs	Nr	8	30	20	18	0	0	0
Projects guaranteed farm	nr	15	60	50	40	24	30	18
influence	% weight	0	-3,5	2,1	18,76	30,5	43,16	38,40

4. Conclusions

It was first created in Romania in support of agricultural policy instruments. But using these tools requires a complex assessment of the impacts of their use to effect the reform and modernization of agriculture, along with re-evaluation of control actions and public institutions on the compliance profile of quality and quantity of agricultural production and livestock, food security of the population (human nutritional comfort) and not least to create the institutional framework to ensure supervision of production processes even by the end user.

5. Acknowledgements

This work was done by the project "Doctoral Scholarship to improve the quality of young researchers in agronomy and veterinary medicine" Contract Code: POS-DRU/88/1.5/S/52614 Beneficiary: University of Agricultural Sciences and Veterinary Medicine-Bucharest

6. References

- Fuerea, Augustin (2006) *European Union Guide*, IIIrd edition, revised and added, Legal Universe Publishing House, Bucharest,
- Leonte J., Gurcă D., Câmpeanu V., Pietet Ph, (2003) *Common Agricultural Policy – Consequences for Romania*”, European Institute in Romania, Bucharest
- Marcu, V. (2001) *Community Institutional Law*, Iind edition, revised and added, Lumina Lex Publishing House, Bucharest
- Mazilu, D. (2001) *European integration. Community Law and European Institutions*, Lumina Lex Publishing House, Bucharest
- Mircea A., Mircea D., (2009) *Administrative Capacity Financial Support Piles*, Bucharest
- Mircea A., Mircea D., (2009) *Pillars of financial support for the development of administrative capacity*, Bucharest
- Pascariu G. C., (1999) *European Union. Policies and Agricultural Prices*, Economic Publishing House, Bucharest
- www.ec.europa.eu/agriculture
- www.eur-lex.europa.eu/ro/index.htm
- www.europa.eu
- www.europa.eu/index_ro.htm
- www.ier.ro

CHALLENGES OF OPERATING AND COMPLYING WITH THE UCITS IV DIRECTIVE

SAVA Cătălina

Ph. D. Student, Faculty of Economic Sciences / Doctoral School, Lucian Blaga University of Sibiu, Sibiu, Romania, claudiac_2001@yahoo.com

RADU Ioana

Ph. D. Student, Faculty of Economic Sciences and Business Administration / Doctoral School, Babes Bolyai University, Cluj Napoca, Romania, ioana19radu@yahoo.com

Abstract: *The paper explores the latest changes encountered in the new UCITS Directive i.e. 2009/65/EC and tries to identify the perspectives offered by their transposition in the national legislation. Also, it examines and captures the level of compliance of the EU Member States to the new regulations for collective investments in securities. Organized in 4 sections, the study provides two contributions. First, it presents the newest UCITS regulations compared to the previous one, synthesizing them in five issues. Secondly, it provides an overview on the problems occurred on proliferating funds of a sub-optimal size in detriment of investors during the financial crisis.*

Key words: harmonized investment funds, UCITS Directive regulatory, management passport

JEL classification: K 22, G 28, G 29.

1. Introduction

The history of mutual funds in Romania is, as short, as it is turbulent. Nothing in the evolution of this segment of the Stock Market couldn't go unnoticed by the spectacular evolution before 2000 or after. For the resounding failure of the largest investment trusts, the National Investment Fund case (abr. In ro. FNI), has affected the confidence of investors' so long, as the combined efforts and results of fund managers and the supervisory and regulatory authority of the capital market to demonstrate stability by legislative consistency and professionalism. Industry was virtually rebuilt by developing a common standard line with the European legislation.

The following analysis deals with the last updates of 2009/65/EC Directive of the European Parliament introduced to harmonized funds (i.e. to Undertakings for Collective Investments in Transferable Securities (UCITS)).

In this context, the paper aims to identify the main changes imposed by the new Directive. Also, it examines and captures the level of compliance to the new regulations of the investment fund market in Europe.

2. UCITS Statistics

UCITS in Europe has a longer and more important history. In 2006, UCITS net assets stood at EUR 5.9 trillion and it reaches 4.5 trillion EUR at the end of 2008 because of the global financial crisis which has made from 2008 one of the most difficult year in the perspective of investment funds too. UCITS outflows for the year were EUR 356 billion in 2008. Almost 40% of the total outflows from UCITS in 2008 were recorded in the single month of October. 2009 saw the UCITS fund industry recovering from the onslaught of the global credit crisis in 2008, with total net assets growing 17% to EUR5.3trillion. In 2010, UCITS continued to grow with total net assets growing 13% to EUR5.9trillion. UCITS enjoyed net inflows of EUR 166 billion in 2010.

Table 1: UCITS in Europe – statistical evidence on NAV and number of UCITS funds

<i>Year</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Net assets € bn	5,956	6,159	4,543	5,315	5,990
Year on Year % growth	-	3%	-26%	17%	13%
Total number of UCITS	33,347	36,156	37,330	36,011	36,490
Year on Year % growth	-	8%	3%	-4%	1%

Source: EFAMA Fact Book 2010, PwC analysis

If we examine the last five years (Table 1) we can see that the UCITS funds industry had a setback in 2008 as a result of the global financial crisis, where the number assets decreased dramatically. The impact on the number of UCITS funds was not felt until the following year, where at the end of 2009, the total number of UCITS stood at 36,011 compared to 37,330 at the end of 2008. The financial crisis were quickly reversed and in 2009 UCITS assets rose by 17% and as of 2010, UCITS assets were making their way up to the previous high of 2007. Subsequently, as of 2010, UCITS fund numbers had increased again to 36,490.

In the five years from 2006 to 2010, we can see that the top ten countries each year for UCITS distribution have been mainly European based, which is not surprising given that UCITS is a European products. The top three have been consistent for the last five years; Germany, Austria and Switzerland. France Spain and the Netherlands have moved between ranks 4 and 7. Romania is not, we hope for the moment, on the map of the European UCITS industry. (see Table 2.)

Table 2: Top five European countries for UCITS

	2006	2007	2008	2009	2010
1	Germany	Germany	Germany	Germany	Germany
2	Austria	Austria	Austria	Austria	Austria
3	Switzerland	Switzerland	Switzerland	Switzerland	Switzerland
4	France	France	Netherlands	France	Netherlands
5	Netherlands	Spain	France	Netherlands	Spain

Source: EFAMA Fact Book 2010, PwC analysis

3. New regulations on complying and applying the UCITS IV (i.e. Directive 2009/65/EC)

Although the general mechanism of operation of investment funds and investment companies remains unchanged, the new UCITS Directive (i.e. Directive 2009/65/EC) provides innovation in terms of instruments they invest into and market operations they can perform, types, cross-border transactions, rules for authorization and supervision.

It has been reached to a point of development of related markets in the EU Member States when the national laws governing this field to be aligned so they can provide a coherent and consistent framework along with ensuring effective protection of investors.

The experience of the EU Member States that have come in the application and exploiting of the 85/611 Directive on collective investments in securities and the finding of gaps or insufficiently regulatory have led to the idea that is necessary a common set of requirements on authorizing, functional structuring that harmonized funds and asset management companies must comply.

Given that this consistent regulatory framework is operating and the supervisory authorities are sizing their work properly, are created the conditions that the authorization of functioning obtained by an undertaking collective investment in transferable securities, whether open-end funds (so called mutual funds) or investment company, or the management company, guarantee throughout the Community that all the conditions established at European level are met, and thereby, the prerequisites for correct functioning and adequate protection are provided to investors.

Unlike the prior Directive whose provisions are amended and complete, the new Community act (i.e. the new Directive) is referring to a single operating authorization, valid throughout the entire European Community. Moreover, it is added the oversight principle exercised by the state of origin, i.e. by the state in which such entity was established. In fact, this situation involves using a Passport, which means that investment funds and management companies that have obtained an authorization from the competent authority of the Member State of origin will be able to provide services throughout the Community. As a consequence, management companies may choose to do this by setting up branches or on the free movement of services. Once this authorization is acquired, the asset management companies can sell units of harmonized and non-harmonized funds in other EU member states, fund units that are direct managed or are under management of another company. Also, they will be also able to manage the assets of investment companies established in another state of EU or to provide portfolio management activities for.

Depending on the amount of the portfolio they manage, the management companies of harmonized funds are imposed to have and to maintain a certain level of initial capital, condition that is required as a result of the recent crisis that brought the worlds' increasing attention on financial stability.

In the same matter, the new Directive adds the notion of „two person management”, which is actually a parallel strengthening of the management by ordering the management companies to develop a detailed internal control mechanism. Furthermore, the management companies may carry individual portfolio management activities, including pension funds portfolios – which appear as a premiere.

The new regulations concerning the delegation of management activities outlined in the UCITS IV Directive, meaning that management companies, in order to increase their business efficiency may delegate, by proxy, certain functions to a third party. But, for these situations, the task of the supervisory authority of the origin state must be that the delegation to one or more third parties will not be done so that the management company to turn into a „mailbox” and that these delegations will be made to prevent the proper discharge of supervision. However, delegating will not affect the obligations that both depository and management company have to investors or to the competent authority. Although the new Directive, subject of the analysis, does not provide a harmonized set of requirements that guide the delegation, it is possible for it to materialize as a consultation guide of all EU jurisdictions. As a result, investment companies must comply with the new rules on delegation, directly for the self-managed ones and indirectly where they designated another investment management company.

Regarding the principle of supervision by the origin state, it requires that competent authorities might withdraw or refuse authorization of operating, in cases where certain factors, such as: operations content program, geographic dispersal or the fact that the activities are carried out without the possibility of error, indicates that the management company has opted for the legal system from a member state, in order to avoid the strictest obligations imposed in another member state, in whose territory already is carried most of the activity. Thus, the Directive seeks to prevent what in literature is known as „supervisory arbitrage”, that has been adapted from the supervision of financial groups.

From a general overview of the new UCITS Directive content, can be observed the idea of encouraging the competitive environment by opening the cross-border operations. Related to this, are raising several issues concerning the placements made by the investment company, especially for those linked to investor relationship with management company. As a consequence, the UCITS IV Directive stipulates the responsibility of management company for establishing clear and detailed procedures regarding the administration and the settlement of investors’ complains, the nature of the rules applicable procedures in the distribution of fund units or ones of administrative nature, by establishing a correspondence address that mustn’t be the management company. Company management should also establish procedures which make possible, upon request, the distribution of information to the public, for investors and to the competent authority of the member state of origin of the investment fund, as well.

At the same time, the competent authority that authorizes the collective investment funds must evaluate the rules for these investment vehicles, the custodian choice and the management company’s ability to manage such investment vehicles. In the case that the management company is located in another member state, the competent authority should be able to rely on the authorization issued in its origin state, in terms of categories or types of funds that the company can manage. The approval of harmonized investment funds will not entail additional capital requirements for the management company. Instead, requires that the management company to have its headquarters in the member state of origin of the concerned investment fund or locating any activity of the company in the member state of investment fund origin.

The competent authority of the UCITS origin member state must be able to effectively oversee the fulfillment of all conditions regarding the establishment and functioning of these investment funds which are the subject to applicable law in the origin state. In addition, the competent authority should also, be able to obtain information directly from the leading management company.

Relating to the host state of the management company, the competent authority must be able to request information about the transactions made by the hosted UCITS, including booking and transactions records. In order to act appropriately in case of violating the law, the competent authority from the host member state of the management company must be able to rely on the cooperation with authorities in the member state of origin. Even if in such case, the Directive provides that if necessary, the host member state can act directly against the management company.

Nevertheless, it is mandatory that the competent authority of the member state of origin of investment fund to have all the necessary levers to remedy any violations of the law, case for they can apply preventive measures or penalties against the management company, going up to the disposal of the administration request. For this, the competent authority should establish certain regulations under which to order the arrangements for the proper administration, or even for liquidating the investment fund. The

opportunity granted to the competent authority by the Directive (which is not different from that provided in the previous Community legislation) to appoint another management company doesn't come with anything new in support of the authority to eliminate the arbitrage by introducing Community criteria.

In order to prevent "supervisory arbitrage" described above, and, in order to strengthen the confidence in the principle of supervision by the competent authority of the member state of origin, the authorization must be refused if a harmonized fund is unable to distribute its units in its origin state. Once it is approved, such a investment fund should have the freedom to choose the member states where its units/titles to be sold.

Another challenge of the new Directive was the issue of fund merger situation that is current and which encounters legislative or administrative difficulties in many EU countries. Therefore, the UCITS IV Directive refers to all major merging techniques used in the European Community and doesn't require to a member state to introduce these techniques in their legislation, but to recognize the transfer of the assets resulting from them. Merging the harmonized funds may be based on regulations of the national law but it may not be possible unless they were not distributed outside the member state of origin, and so, they haven't been notified as having international distribution. Referred to the conditions of quorum and for these operations should not be discriminatory to those applicable to international mergers or stricter than those that are applicable to companies. Even for these operations the investors' protection is request. Thus, the mergers of such undertaking collective investments in securities should be the subject to authorization by the competent authority, whether it is domestic or international operation. In the case of international mergers, each of the supervisory authorities of their involved domiciled UCITS must authorize these operations, but the responsibility regarding the investors' protection must belong to the authority of the member state of the new UCITS resulted. As provided in the Romanian legislation, in the case of the domestic mergers, and in terms of international mergers, the holders of unit funds at one of the merging parts and the ones of the absorber fund, must be able to request redemption or, where possible, conversion of units into another fund with similar investment policy and managed by the same management company or a company that is in contact with. This investors' right should not be encumbered by fees or any other charges, as currently happens in the case of domestic mergers.

The Directive requires that merger should be supervised by an independent authority. The role of each fund custodians involved in the merger is extended to the fact that they should check the terms of the merger agreement between the mergers set forth in the documentation and the regulation stipulated in the fund rules. Either custodian or an external auditor, should issue a report on validating the methods and the techniques for the measuring the assets and the liabilities of the funds involved, and also, the "exchange rate" provided in the merger document, i.e. effective exchange rate or, where applicable – net asset value per unit fund.

The Directive encourages UCITS to invest its assets in units of similar investment funds or in other collective investment undertakings and other investment vehicles that invest in liquid financial assets, applying the principle of risk diversification and are the subject to effective supervision. By granting this freedom, the growth of investment opportunities should be compensated for providing investors' protection. Therefore, the Directive provides clear rules regarding the investment limits, rules of transparency and rules to prevent a cascade phenomenon.

Although precaution is the watchword for EC, the new Directive allows to harmonized funds to invest, as a fact of general rules for investment or hedging purposes to fit the risk profile provided in the prospectus by adding derivatives. But the maximum exposure is necessary not to exceed the value of net assets of the fund.

Given the risk of these operations and the need to ensure investor protection through transparency, it is imperative that the funds to describe their strategies, their investment techniques and the investment limits applicable. For prudential reasons is necessary to avoid excessive investments of UCITS funds in those financial instruments that offer a exposure to the counterparty risk to the issuing entity or to entities belonging to the same group. Surprising is the ability to invest in over-the-counter derivatives, even if the requirements for investor protection refer to the eligibility of counterparties and of instruments liquidity and their continuous evaluation of position.

The 85/611 Directive foresees exemptions to the limits to which UCITS may invest in securities issued by the same issuer, waivers that are applicable to bonds issued or guaranteed by a member state.

Taking into account this exception, also the new Directive stipulates it but in a more restricted form for the case of corporative bonds which benefit special guarantees according to applicable laws. The exemption is applied to all desired corporate bonds that meet certain criteria, widely accepted, but it is left

to member states preference to draw-up a list of the corporative bonds for which will be applied the exemption.

The novelty that the investigated Directive introduces is arising from the practice of several Community states that have adopted the regulations concerning the opportunities for the mutual funds managed by different management companies (i.e. non-coordinated collective investment undertaking) to put their assets in a so-called master fund. To enable the of this type of structure for the harmonized funds, it is necessary that the new Directive to exempt the harmonized feeder funds that are wishing to invest in master funds more than 10% of their assets. That's because feeder funds invest their assets almost entirely in harmonized master fund portfolios, and the latter being, of course, the subject to the rules of diversification. The new created master-feeder structures can be run either as individual funds established or not in the same member state. At the moment, for reasons of supervision and a better understanding of the mechanism by investors (in order to ensure their protection), no feeder fund may invest in more than one master fund, which, we mentioned above, is harmonized fund and authorized as such. Feeder fund investing in a master fund is being subject to prior authorization from the competent authority of the member state of origin of the feeder fund.

As described, the UCITS Directive lays the basis for a single market for these funds and a very serious assessment impact has been made. Within the Lamfalussy approach, except the five issues above, the Directive tackles problems regarding proliferation of funds of a sub-optimal size and detriment of investors during the financial crisis.

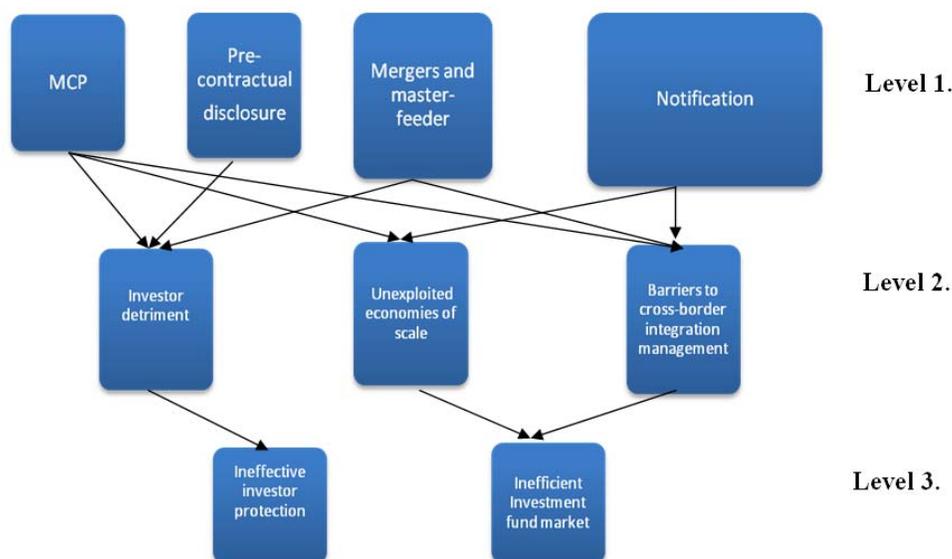
The first arises from the fact that The European fund market is characterized by a high member of small size- funds managing less than 50 million EUR assets and by the fact that the average size of a fund is fifth size of an American one. This means that economies of scale have not been exploited.

The second arises from that the necessity of effectiveness and efficiency of UCITS have to be assessed in relation to systemic risks and investor protection. Level 2 has five principal areas which were analyzed in depth in the impact assessment and we could identify them as follows:

Table 1: Main areas of assessment of UCITS IV Directive on the systemic risks and investor protection

<i>Problem area</i>	<i>Content</i>
Management companies passport (MCP)	Inconsistencies in and inappropriateness of organization, conduct of business, conflicts of interest rules for management companies
MCP	Inconsistencies in and inappropriateness of risk management
Pre- contractual disclosure	Investors unable to make informed investment decisions: disclosures are difficult to understand and hard to compare
Mergers and Master-Feeder	Inadequately informed investors on the impact of the merger of a fund in which they invest, the conversion of a fund into a feeder or change of the feeder's master
Notification	Ineffective and inconsistent mechanisms for communication between competent authorities in relation to the notification procedure

Figure 1: The linkage of the UCITS IV implementing measures



Source: authors' adaptation

The specific issues identified in relation to new Directive (UCITS IV) implementing measures are strongly linked to and support these level 1 changes in the framework, and are generally mandated as part of those changes at level 1 (Figure 1.). The analysis of concrete options for level 2 measures consider the precise nature and extent to which harmonization is necessary, always with the principle of subsidiarity in view. However, action solely at Member State level would not be able to effectively or efficiently address the issues that level 2 measures are being designed to address, given the centrality of the single market and cross-border dimension to the UCITS market. Action solely at Member State level would run the risk of erecting or maintaining barriers to further integration and efficiency in the UCITS market as a whole, including barriers to UCITS that operate on a cross-border basis, thereby potentially raising systemic risks and risks to investors in UCITS, whilst also increasing costs.

4. Conclusions

The changes introduced by the new UCITS Directive could be synthesized as follows:

- Introduces the passport for management companies which allow them to pursue, in the Community, portfolio management services for the UCITS having another home member state than the management company.
- Lays down provisions facilitating mergers between UCITS. The Directive do not impose for member states to introduce in their national legislation all the merger techniques it speaks about but requires recognition of any transfer of assets resulting from using those merger techniques.
- Allows UCITS to use master feeder structures, which is an absolute new vision. An UCITS could be authorized to invest up to 85% of its assets into another UCITS units, even they are under the same management or not and even they are established in the same member state or not. Please, note that no feeder UCITS should be able to invest into more than one master fund.
- Asks for simplified notification procedures between home and host member states regarding UCITS units' distribution on the territory of another member state.
- Reinforces the necessity of enhanced exchange of information between national competent authorities and of cooperation stressing the role of authorities in supervising and regulating process. Once again, as MiFID provides, for all of their duties, designing appropriate powers is a necessity.

Throughout, the UCITS IV Directive restores the current issues related to the power of EU Member States have to provide to supervising authorities, on one hand, and to create a common framework for these supervisors on implementing evenly the Directives' new regulations and to allow creating the basis for a better cooperation and exchange of information between, on the other hand.

5. References

- Filip Angela Maria (2008) – *Evaluarea performanței fondurilor mutuale din România*, Editura Casa Cărții de Știință, Cluj Napoca
- Nistor I, Radu I. (2011) – Global tendencies in investment fund market development, *Finance-Challenges of the Future Magazine*, Year XI, No. 13/2011, Universitaria Publishing, Craiova, ISSN 1583-3712
- Sava C., Radu I. (2012) – The attractiveness of harmonized investment funds – evidence on Romanian Market, under publishing in *Ovidius University Annals, Economic Series, Volume XII, no1/2012*
- Radu I., Sava C. (2012) – Shifting investments strategy – from equity funds to money market funds – The case of Romanian Open-End Fund Market during the financial crisis, under publishing in *Transilvania University Bulletin*, Vol.5 (54) – Economic Sciences Series, No.1-2012
- Directive 2009/65/EC of the European Parliament on the coordination of laws, regulations and administrative provisions relating to Undertakings for Collective Investments in Transferable Securities (UCITS).
- EFAMA Fact Book 2010, PwC analysis
- EFAMA Statistical Release full report on 2010
- ICI Factbook 2010, 50th edition – A review of trends and activity of the Investment Company Industry, www.icifactbook.org
- www.cnvmr.ro, www.aaf.ro, www.kmarket.ro

CREDITING THE AGRICULTURE-A PAST AND PRESENT CONCERN OF THE ROMANIAN BANKINGSYSTEM

SBÂRCEA IOANA RALUCA

Ph. D. Teaching assistant, Faculty of Economic Sciences, Lucian Blaga University of Sibiu, Sibiu, Romania, ioana.sbarcea@ulbsibiu.ro

Abstract: *Crediting the agriculture was a constant concern of the Romanian banking sector. This aspect was and is related with the high share of the agricultural area present across the country and with the existence of a consistent rural population over time. In this paper I have marked the primary moments that have marked the lending activity of the agriculture from its beginning, until present. I outlined the fact that this activity has always been facing difficulties, something that has damaged the possibility of a sustainable development of this sector, whose main challenge remains the lack of funding adapted to the development needs.*

Key words: credit, agriculture, banks involved in agriculture

JEL classification: G 21, O 13, Q 14

Granting credits to support agriculture is found as a concern in the banking activity history, so the idea of developing this activity appeared once with the emergence of the first opening projects of some banks. This was due to the fact that 80% of the total population in 1899 was represented by the rural population (Pintea, A., Ruscanu, G., 1995, p 40), and the productive area was approximately 83.5% of the extent of the country, respectively 29.504.900 hectares in 1939, being characterized through a rapid increase from 5 million hectares in 1889 (Simionescu, I., p 353). In addition, before the apparition of the first bank institutions, loans were offered by money lenders and the interest could have been paid even in kind, labor work or in products by the customers from rural areas, for them it was recorded the highest level, up to 300%.

The need to establish a banking institution for financing agriculture has manifested itself since 1872, when it was expressed through the voice of John C. Bratianu in the owners meeting convening notice, in this sense:

“Know that we are on the verge of setting up, in the country, a landing credit. The concession of this institution will surely represent the subject of the first debates that will be held in our chambers. It is required, in the most urgent matter, to establish of a Land Credit; such Credit, made in good conditions, not only will lose ownership of its pressing tasks, but will also increase its value.” (Pintea, A., Ruscanu, G., 1995, p. 48)

Thus, the credit in agriculture in Romania has a history of over **135 years**. The forms that this form of crediting has taken over time were the *land credit* and the *agricultural credit*. The land credit was intended for the purchase of lands, for land improvements, being typically a long term credit, secured by mortgage on the purchased property (also called mortgage credit) and the agricultural credit had as destination the acquisition of objects, cars, tools, in this case being a long term credit, or it covered the production costs, in this case being a short-term credit. These agricultural credits were typically secured with collateral over the property purchased, or over the agricultural harvest.(Zahiu L., Toncea V., Lăpușan, A., Toderoiu, F., Dumitru, M., 2003, p.361).

Before the Second World War, agricultural loans were granted mainly by three types of institutions:

- **private banks** that granted loans to big landowners;
- **state institutions**, namely the National Bank of Romania, which proceed to supporting this sector through loans, rediscounts, taking over some debts of farmers;
- **credit societies** (organized as local cooperatives, popular banks) which also provided credits to farmers with reduced possibilities, although not in a large proportion.

Although the agriculture played an important role in the development of the economy, and banks had networks through which they could credit this sector, and at that time *the crediting capacity was reduced*. The most often invoked causes at those times were *low profitability of the agricultural holdings, the crediting costs which were higher*, especially for small farmers as well as *the credit risk related to this sector*, especially after crisis periods, as the ones in 1873, 1911, 1912-1913, from 1929-1933, when the

agricultural sector was severely affected, the prices of the agricultural products had dropped dramatically, and the repayment ability was diminished.

After World War II, the banking activity experienced a restriction period, which was also felt in the agricultural lending activity.

The main institutions and the most important moments that marked these crediting operations of agriculture until 1990, are summarized in box no. 1.

Box 1: The main institutions and the most important moments that marked the agricultural crediting activity until 1990

1872

- Establishment of **Albina Bank of Sibiu**, a bank with purely Romanian capital, whose ownership consisted of 140 peasants, along with 640 big landowners, officials, lawyers, priests, doctors, teachers;
- in 1877, the Albina Bank introduced in the product portfolio the fixed credits with mortgage covering, which represented a simplified banking operation, addressed to the peasantry; these loans were granted for a period of maximum 6 months, under the condition that the landed property of the borrower to be entered first as mortgage, the interest charged being of 10%;
- although it functioned only until 1918, because the crisis of 1911 and the floods of 1912-1913 determined it to reduce to maximum the new loans, its role is an important one because it has supported the transfer of land from the hands of the Hungarian nobility, to the hands of the peasantry and of the bourgeoisie, by providing credits to the people living on estates, for the purchase of the lots offered for sale by their owners;

1873

- the establishment of the **Rural Land Credit Bucharest**, on the basis of direct association and mutual guarantee of land owners, in order to provide long term credits;
- until 1915, the Rural Land Credit granted loans in value of 725.1 million lei, to rural owners, demonstrating that it can fulfill its economic function for which it was created;

1881

- the **Agricultural Credit Houses** were created, in order to finance small farmers, as being institutions having the state as major shareholder (two thirds);
- the operations of these Agricultural Credit Houses, consisted in receiving deposits or savings, discounting policies and granting collateral loans on agricultural products, inventory objects, with an interest rate of 7-11% over a period of 9 months;
- although they were created to support the peasantry, they have worked for a period of 11 years, during which they granted loans worth 358.8 million lei to large landowners;

1893

- the **Agricultural Credit was established in Bucharest**, with a state-owned capital, being supported by the National Bank with a loan of 20 million lei;
- the Agricultural Credit granted credits for periods of 3, 6, 9 months, up to a maximum of 1,000 lei, with a 10% interest to the peasants which were given land to, but which did not have the agricultural inventory needed to increase production;
- it worked until 1907, but it did not solve the problems of the peasantry because the loans granted were too low to determine the development of the farm in question.

1894

- the establishment of the **Agricultural Bank**, with capital owned mainly by landowners, with the purpose to credit, on short-term, the large and medium property;
- later, in 1939, it changed its name to the **National Agricultural Credit**, following that between 1948 and 1968 to be disbanded and the lending function returned to the Agricultural Department of the National Bank of Romania.

1899-1902

- the establishment of 700 **popular village banks**, as cooperative associations;
- these institutions tried to ensure small households with funds, so that by 1907, they granted loans worth 36.8 million lei gold, value that exceeded the credits granted by other profile credit institutions;
- the loans were granted on a short-term, with a 10% interest.

1908

- the establishment of the **Rural House** with a social capital of 50% from state participation and 50% from

the participation of private persons and of some banks;

- the operations of the Rural House consisted in buying and selling lands, granting mortgage credits to villagers (on long term - 50 years) for purchasing land, granting loans to farmers who purchased lands in other counties, in order to establish households, granting loans to landlords or lessees, for production purposes, on short term, with lien on crops;

- the interests perceived ranged from 5.5% to 9.5%, at that time the credits granted were the cheapest.

1915

- the establishment, in addition to the National Bank of Romania, of the **County Home Pledge Loans of Farmers**, which from the loans received from the National Bank and from the Ministry of Finances, could provide loans to small rural producers, on periods of 3,6,9 months with an interest of 5-6%, pledged with agricultural products and public effects.

After the First World War, some banks were affected, so the general trend between 1918-1929 was to restrict the credits granted by the Rural Houses and by the Popular Banks and to point towards the large and medium landowners customers. In addition, through the land reform after the war, 6.5 million hectares, owned before by 17.5 thousand owners, have passed into the hands of approximately 1.36 million peasants; this determined a decrease in the quantity and quality of the agricultural production.

The 1929-1933 economic crisis has mainly affected credit unions, small banks and credit institutions for agriculture. The Popular Romanian banks decreased from a number of 4743 in 1928 to 4577 in 1933.

1929

- the establishment of the Central Cooperative Bank as private institution that was the main financing source for all cooperative organizations;

1931

- the **Mortgage Agricultural Credit of Romania** was set up, with a capital belonging to the Romanian state and to some foreign consortia;

- the purpose of these institutions was to provide mortgage credits to farmers, on long term - 10 to 30 years, with a 3% interest, but the sum of the loan could not exceed 50% from the value of the mortgaged property;

- this bank directed its activity towards the big agricultural producers.

The Second World War affected all economic sectors and in agriculture, the cereal production was reduced to half compared to 1939, and the banking system was severely affected, which is why the National Bank has provided funds to support the key economic sectors.

After nationalization, the National Bank of Romania reduced its activity only to crediting the industry and agriculture, in agriculture the granted sums were directed towards the purchase of agricultural products and raw materials. For agriculture, the National Bank decided to leave an agricultural bank in each county and has abolished the banks specialized for agriculture. The loans granted to individual producers were very small and were limited to the peasants that were given land under the agrarian reform of 1945.

1948

- instead of the liquidated popular banks were established **The Credit and Savings Unions** for granting credits for the development of the food production in their own households and for meeting certain household and family needs of the cooperators, with a current interest of 5%.

1968

- the **Bank for Agriculture and Food Industry** (B.A.F.I.) was established in order to achieve the party and state policy in the domains of lending, production financing, processing agricultural products, investments and goods movement from agriculture, the food industry and water sector.

Source:

Pîntea, A., Ruscanu, G. – *Băncile în economia românească 1774-1995*, Editura Economică, București, 1995, p. 48,50,73,74,92,94, 62,167,267,268

Zahiu, Letiția, Toncea, Veronica, Lăpușan, A., Toderoiu, F., Dumitru, M. – *Structurile agrare și viitorul politicilor agricole*, Editura Economică, București 2003, p. 361-364

Simionescu, I. - *Țara noastră. Oameni, locuri, lucruri*, București 1938, capitolul XX, p. 360, <http://www.unibuc.ro/CLASSICA/taranoastra/>

After 1990, the Romanian banking system was marked by major changes, and the banking activity was conducted through the National Bank of Romania and through banking companies constituted as commercial companies, under Law no. 31/1990. Lending the agriculture has been restricted taking into consideration the structure of the agricultural areas consisting of over four million peasant

households that did not meet the conditions required to access the much needed credits for their development.

In 1990, over the old structure of the Bank for Agriculture and Food Industry has been created a new entity, namely the **Agricultural Bank**, as a joint stock company having a mixed capital. Until 1997, when the restructuring activity of the bank has started, it worked as a *banking institution specialized in lending the agriculture*. At that time the financial support of the agriculture was made through the system of the directed credits, from which the agricultural commercial societies with state capital or with majority state capital mainly benefited from. These companies borrowed large sums and also benefited from the interest subsidy of up to 60-70%, and the administration of these subsidies was made through the Agricultural Bank. Thus, the Agricultural Bank was an interim of the funds transferred from the budget or from the National Bank of Romania, *the credits granted were guaranteed by the state and were not granted on commercial basis*. In this context, the Agricultural Bank *has accumulated a large amount of bad loans, which brought it to bankruptcy* (Zahiu L., Toncea V., Lăpușan, A., Toderoiu, F., Dumitru, M., 2003, p.368). Starting with 1997, the bank entered in a restructuring process which ended in 2001 with the acquisition of the majority stake of the bank by the Raiffeisen Bank.

By the year 1998, most Romanian banks gave a low volume of credits to agriculture, and the institutions with rural credit profile had an insignificant role (table no. 1).

Table 1: The structure of the financial markets from the rural environment in 1998

Specification	The structure according to the number of the credit contracts (%)		The structure according to the annual borrowed sum (%)	
	Agricultural farms	Agricultural enterprises	Agricultural farms	Agricultural enterprises
Banks, from which	3,5	23,1	16,6	68,7
State banks	1,6	16,1	9,6	55,7
Private banks	1,9	7,0	6,9	13,0
Other organized forms of credit granting, from which:	37,4	0,4	39,6	0,1
Mutual benefit societies	28,2	0,0	21,5	-
Cooperatives	9,2	0,4	18,1	0,1
Informal sector, from which:	59,1	76,5	43,8	31,2
Moneylenders	0,7	0,8	1,9	0,1
Friends	46,7	20,2	26,9	3,1
Commercial credit	7,1	41,6	12,8	22,9
Sales with delivery on time	4,6	23,9	2,2	5,1
Total	100,0	100,0	100,0	100,0

Source: Zahiu, Letiția, Toncea, Veronica, Lăpușan, A., Toderoiu, F., Dumitru, M. – *Structurile agrare și viitorul politicilor agricole*, Editura Economică, București 2003, p. 367

After the year 1999, banks that were no longer specialized in crediting the agriculture have shown certain reluctance in crediting this sector, the reasons being mainly related to the *risks that this activity has involved over time and to the lack of an organizational system of the credit unions and of the legal and institutional framework of the agricultural credit*.

Although the structure of the banking system has expanded, along with the penetration of the foreign capital, the interest for crediting the agriculture was small, such loans being granted only if there were present refinancing lines of the National Bank of Romania or loans with subsidized interest. In the case of subsidized loans, the risk of default was lower, because the beneficiaries had an interest in repaying the loans, this being the condition of collecting the subsidy. In this category it is also included the Agricultural Credit for Production, regulated since 2003 (Law no.150 of 14 April 2003 of the agricultural credit for production, published in the Official Gazette no. 276/19 April 2003), which aimed at re-launching the agricultural crediting activity. Granting the agricultural credit (which is a short-term credit that finances production) has several advantages, such as:

- crediting the agricultural production is made from the *commercial banks own sources*;
- loans are granted with *current market interest*;
- repayment of loans is correlated with the recovery periods of production, up to one year;
- by involving the state it is ensured a greater *security in repayment of loans*, thus, borrowers who repay their loans and pay interests on the deadlines set, benefit from a non-reimbursable

component of up to 30% from the volume of the loan, depending on the destination of the loan (the value is established by law for each destination in part).

However, a worrying development in the Romanian economy is strongly linked to the *downward trend of the agriculture's contribution to the gross domestic product*, due to the higher import of food and agricultural products (table no. 2).

Table 2: The contribution of agriculture, forestry and fishery to the Gross Domestic Product formation (2007- trim. I 2011)

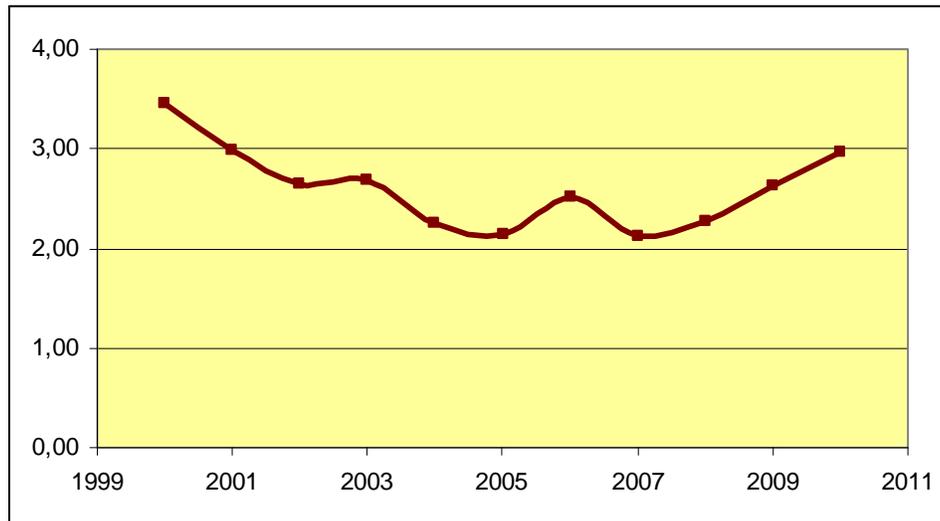
The gross domestic product	2007	2008	2009	2010	2011 trim I
Agriculture, forestry, fishing and fishery	23992,2	34126,3	31734,9	30728,6	2229,2
TOTAL GDP	416006,8	514700	498007,5	513640,8	106723,5
% from GDP	5,8	6,6	6,4	6	2,1

Source: MADR – Agriculture in the economy, July 2011, www.madr.ro

Thus, we observe a decrease of the agriculture's share in the formation of the gross domestic product from 21.91% in 1990 (according to the statistical sections from the Annual Report of the NBR, statistical section, page 6 *), to 6% in 2010 and the national agricultural production was gradually replaced by the agricultural products imports.

This is mainly due to the *lack of competitiveness of domestic agricultural products*, determined in turn by a lack of investment in agriculture, also caused by a lack of financing capital in this sector. This can be seen by analyzing the evolution of the share of loans granted in agriculture during 2000-2010 (chart no. 1).

Figure 1: The evolution of the share of the granted credits in agriculture in total granted loans (%)



Source: Processing after the NBR - Interactive Database, Statistical Report - Loans granted and the commitments assumed by the credit institutions, www.bnro.ro

Thus, the share of loans granted for agriculture, forestry and fishery has decreased from 3.45% in 2000 to 2.96% in 2010. I think this is mainly due to the banks reluctance towards the risk associated to agricultural loans and also to the absence of a commercial bank specialized in granting agricultural loans. **Regarding the crediting activity in agriculture after the year 2000**, it is doubtful about some peculiarities about Romania's status of candidate country for accession to the European Union, and then as a European Union member state. This status brought about *community funds for financing agriculture*. These funds are substantial, given the agricultural area per capita, which is recording a double level compared to that recorded in the European Union (MARD - Agriculture in the Economy, July 2011).

Analyzing the outstanding moments in the development of the Romanian agriculture lending activity we notice that **the granted loans in this sector have always created problems**, bigger or smaller in the banks activity, they were continuously striving to provide the most accessible forms of

financing that would allow for this very important sector of the economy of Romania to develop itself. These difficulties are explained by the reduced profitability of farms that have not practiced viable activities that could allow them to pay back the granted loans, by the vulnerability of this sector to the economical and financial shocks that occurred over time, by failure to create and regulate a framework (I am referring to the quality of the agricultural holdings and their ability to implement viable investment projects) that would be suitable for agricultural lending. Besides, **these difficulties and failures are not current matters**; they exist for many years, and continue to persist because they have not yet been resolved:

"... due to the absence of a truly cooperative structure and also of the credit practices, promoting more the consumption than the production credits and their mobilization, the system of the popular banks was not fully adapted to the credit needs of the peasantry, lacking the credit procurement, and also the funding opportunities for crops " (quote by Professor Virgil Madgearu, The Evolution of the Romanian economy after the World War - 1940 (Zahiu L. Toncea V. Lapusan, A., Toderoiu, F., Davies, M., 2003, p.131)).

It is true that today peasant popular banks no longer exist, but I think that the problems of the agriculture financing are the same. These funding issues of the agriculture, this important sector for the Romanian economy can be solved only if special banks will be established, with specialists who have expertise in this area, and if the problems related to working the agricultural areas will be solved, an aspect that diminishes the competitiveness of the production at national and international level.

References

- Pinteia, A., Ruscanu, G. (1995) – *Băncile în economia românească 1774-1995*, Editura Economică, București
- Simionescu, I. - *Țara noastră. Oameni, locuri, lucruri, București 1938*, capitolul XX, <http://www.unibuc.ro/CLASSICA/taranoastra/>
- Zahiu, L., Toncea V., Lăpușan, A., Toderoiu, F., Dumitru, M. (2003) – *Structurile agrare și viitorul politicilor agricole*, Editura Economică, București
- BNR - *Interactive Database, Statistical Report* – The credits granted and the commitments made by the credit institutions, www.bnro.ro
- MARD - *Agriculture in the economy*, July 2011, www.madr.ro
- Law no.150 of 14 April 2003 regarding the agricultural credit for production, published in the Official Gazette no. 276/19 April 2003
- www.madr.ro
- www.bnro.ro

THE CURRENT INTERNATIONAL FINANCIAL CRISIS AND THE FINANCIAL SUPERVISION INSTITUTIONAL ARRANGEMENTS EFFECTIVENESS IN THE EUROPEAN UNION COUNTRIES

STOICA Ovidiu

Ph. D. Professor, Faculty of Economics and Business Administration, Alexandru Ioan Cuza University of Iași, Iași, Romania, ostoica@uaic.ro

CĂPRARU Bogdan

Ph. D. Assistant professor, Faculty of Economics and Business Administration, Alexandru Ioan Cuza University of Iași, Iași, Romania, csb@uaic.ro

Abstract: *The international financial turmoil rise challenges in evaluating and choosing the optimal financial supervision institutional arrangements in many countries. Our study focuses on the financial supervision institutional architecture and its effectiveness in the European Union during the international financial crisis. We evaluated the effectiveness of the financial supervisory framework by groups of countries, categorised according to the supervisory model. Our analysis demonstrates that the performances in what concerns the crisis management were different from one country to another, but also according to the supervisory model, the best performances being registered in those countries using the unified model of financial supervision.*

Key words: financial supervision, central bank, financial stability, European Union, financial crisis

JEL classification: E 58, G 18, G 28, L 51

1. Introduction

The recent international financial turmoil rise challenges in evaluating and choosing the optimal financial supervision institutional arrangements in many countries. In this study we evaluate the financial supervision institutional architecture and its effectiveness in the European Union (EU) countries during the current international crisis. The paper is structured as follows: the first part includes a literature review, dealing with issues about financial supervision institutional arrangements; the second part includes a brief evaluation of the main models of financial supervision and regulation; in the third part of the paper, we assess the institutional financial supervision and regulation architecture and its effectiveness in EU countries between the 2007-2010 period. In the end, we present the conclusions of this study as well as the research agenda and policy implications as results of adopting a certain financial supervisory institutional arrangement.

2. Literature review

There is a large body of literature dealing with issues on financial supervision architecture. Llewellyn (2006), one of the first who studied this field, considers some of the issues involved in organising the institutional structure of financial supervision. Davis and Green (2008) make an essential guide in global financial regulation. Certain studies deal with which model is the most appropriate one: the multi-agencies model or the integrated one; among the main studies in the field are: Kane (1984, 1996), Shleifer (1985), Hölmström and Milgrom (1991), Dewatripont, Gale and Vives (1993), Boot and Thakor (1993), Taylor (1995), Kupiec and White (1996), Romano (1997, 2001), Jewitt and Tirole (1999a, b), Briault (1999), Llewellyn (1999), Dewatripont and Tirole (1999), Abrams and Taylor (2002), Garicano and Lastra (2010).

Other papers, in order to find the optimal financial supervision structure, ask the question if is necessary the central bank's involvement or not: Lastra, (1992), Giddy (1994), Goodhart and Schoenmaker (1995), Di Noia and Di Giorgio (1999), Bini Smaghi (2000), Abrams and Taylor (2001) Gulde and Wolf (2004). Some studies deal with the optimal financial supervision model for EU, like Eijffinger (2001), Di Giorgio and Di Noia (2001), Garicano and Lastra (2010), Masciandaro (2010).

3. Supervision and regulation institutional models

Central banks and other authorities act in two distinct roles in pursuing financial stability - prevention of instability and management of the consequences once markets fail. According to the development of the financial market, its traditions, openness and competitiveness, the national authorities

will choose the most appropriate financial supervisory model, thus willing to insure, as result of an effective financial supervision and regulation, the soundness and stability of the financial system. The institutional arrangements for supervision could be categorised in several ways:

- by institution - different types of institutions may be regulated differently and by different agencies. This kind of arrangement is also called the vertical (silos) model or three-pillar model, with the central bank supervising and regulating the banks, a security regulator, usually a separate commission, overseeing the securities markets and an insurance regulator which may or may not be part of a government ministry;
- by function - different functions may be regulated differently and by different agencies, irrespective of which institutions are performing those functions;
- by objectives – also called “twin peaks”, involves creating two separated integrated agencies: for prudential and conduct-of-business regulation and supervision, both distinguish the two main objectives of regulation - the safety and soundness of institutions and consumer protection;
- in the hybrid regime, some supervisors monitor more than one segment of the market and others only one; it is also called the two pillar system, each one with their own characteristics – some bring securities and insurance supervision together, others link banking and securities sectors;
- the single integrated regulator covers all or most of the financial sector in one institution.

4. Methodology and data

In the first step of our approach, we assess the institutional financial supervision and regulation architecture in EU27 countries, underling the main changes during the current international financial crisis. After that, we evaluate the effectiveness of the financial supervisory framework by groups of countries, categorised according to the supervisory model, analysing indicators that focuses on the performance and soundness of each banking system over the analysed period. Data sets come from ECB statistical data warehouse and World Bank database, for the period 2007-2010.

5. Results and discussions

As result of the analysis of the institutional organisation of the financial regulation and supervision systems in the EU 27 countries, taking into account the institutional reforms during the period 2007-2010, the situation is centralised in Table 1.

Table 1: Financial supervision arrangements 2007-2010 in EU27 countries

Country	Banking sector	Securities sector	Insurance sector	Financial supervision arrangement	Banking sector	Securities sector	Insurance sector	Financial supervision arrangement	Reform year
Austria	U, CB	U	U	Unified	U, CB	U	U	Unified	
Belgium	U	U	U	Unified	CB, SI	CB, SI	CB,SI	Twin Peaks	May 2010
Bulgaria	CB	SI	SI	Hybrid	CB	SI	SI	Hybrid	
Cyprus	CB	S	I	Silos	CB	S	I	Silos	
Czech Republic	CB	CB	CB	Unified	CB	CB	CB	Unified	
Denmark	U	U	U	Unified	U	U	U	Unified	
Estonia	U	U	U	Unified	U	U	U	Unified	
Finland	BS	BS	I	Hybrid	U	U	U	Unified	January2009
France	BI, CB	S	BI, CB	Hybrid	BI, CB	S	BI, CB	Hybrid	
Germany	U, CB	U	U	Unified	U, CB	U	U	Unified	
Greece	CB	S	I	Silos	CB	S	CB	Hybrid	December2010
Hungary	U	U	U	Unified	U	U	U	Unified	
Ireland	U, CB	U, CB	U, CB	Hybrid	CB	CB	CB	Unified	July 2010
Italy	CB	CB, S	I	Hybrid	CB	CB, S	I	Hybrid	
Latvia	U	U	U	Unified	U	U	U	Unified	
Lithuania	CB	S	I	Silos	CB	S	I	Silos	
Luxembourg	BS	BS	I	Hybrid	BS, CB	BS, CB	I, CB	Hybrid	October 2008
Malta	U	U	U	Unified	U	U	U	Unified	
Netherlands	CB, U	CB, U	CB, U	Twin Peaks	CB, U	CB, U	CB, U	Twin Peaks	
Poland	U	U	U	Unified	U	U	U	Unified	
Portugal	CB	CB, S	I	Hybrid	CB	CB, S	I	Hybrid	
Romania	CB	S	I	Silos	CB	S	I	Silos	

Country	Banking sector	Securities sector	Insurance sector	Financial supervision arrangement	Banking sector	Securities sector	Insurance sector	Financial supervision arrangement	Reform year
Slovak Republic	CB	CB	CB	Unified	CB	CB	CB	Unified	
Slovenia	CB	S	I	Silos	CB	S	I	Silos	
Spain	CB	S	I	Silos	CB	S	I	Silos	
Sweden	U	U	U	Unified	U	U	U	Unified	
UK	U	U	U	Unified	U	U	U	Unified	

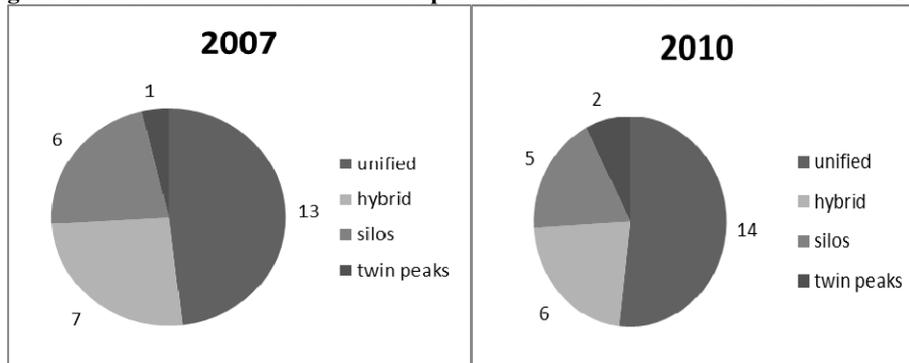
Note: The initials have the following meaning: B = authority specialized in the banking sector; BI = authority specialized in the banking sector and insurance sector; CB = central bank; G= government; I = authority specialized in the insurance sector; S = authority specialized in the securities markets; U = single authority for all sectors; BS = authority specialized in the banking sector and securities markets; SI = authority specialized in the insurance sector and securities markets.

Source: our calculation, using data from central banks' and supervision authorities' web sites.

As one can notice, most of the analysed states already adopted the unified model. Thus, in 2007, there were 13 states using the unified model, among them only 5 with the involvement of the central bank (Austria, Czech Republic, Germany, Slovakia, and Ireland). In 2010, the number of countries with unified financial supervision rose to 14, among them 6 with central bank's involvement in supervision activities. Among the 27 EU countries, from 2007 to 2010, the number of central banks involved in the financial supervision rose from 16 to 17, one of the arguments being the necessity to defend the financial stability, more and more a challenge and a responsibility for the central banks..

During the period 2007-2010, some of the EU states reformed the national supervision systems. Thus, in October 2008 the Luxembourg central bank was charged with financial supervision duties for the entire financial market, Finland, in January 2009 switched from a hybrid to a unified model, in May 2010 Belgium abandoned the unified system in favour of a twin peaks system, in July 2010 Ireland renounced to the hybrid model for a unified one, in December 2010 Greece moved toward a hybrid model from a silos one. Those reforms on the institutional level reflect the preoccupations in order to find the optimal financial supervision structure, as result of the crisis, on the one hand, but also, as results of the developments in the financial markets worldwide, connected with the financial integration and globalization process.

Figure 1: The evolution of the financial supervision institutional models from 2007 to 2010



Source: our calculation, using data from central banks' and supervision authorities' web sites.

In Table 2 there are centralised the main performance and prudential indicators analysed for the EU banking systems in the period 2007-2010, according to the institutional supervisory model adopted and in Annex 1 one can find the graphic evolution of the above mentioned indicators over the period and according to the specific institutional arrangement. In our analysis we will disregard the twin peaks model, because during the analysed period only one country (Netherland) used it, the second one, Belgium, adopting it only in the last analysed year, in 2010.

Table 2: Main performance and prudential indicators for the EU banking systems between 2007 and 2010, according to the financial supervision model

Indicator	Model	Mean	Min.	Max.	St. dev.
ROA	Unified	0.426301	- 3.968981407	1.849591882	1.108708306
	Silos	0.4869061	- 3.941705208	1.80160301	1.109383457
	Hybrid	0.3618324	- 3.086661745	1.975263745	0.986047614
	Twin peaks (Netherlands)	-0.01875	-	-	-
ROE	Unified	4.596885	- 52.38778297	22.51491911	15.92454876
	Silos	6.150289392	- 70.12131781	22.5176211	18.20756613
	Hybrid	3.082479738	- 65.22110694	18.51753133	17.26116911
	Twin peaks (Netherlands)	-1.50581	-	-	-
Overall solvency ratio [%]	Unified	14.66214	10.4759515	54.95577728	6.53390305
	Silos	11.9746519	9.443515045	16.50223064	1.767746774
	Hybrid	12.8725942	9.361497797	18.12163788	2.68469495
	Twin peaks (Netherlands)	13.68613	-	-	-
Tier 1 ratio [%]	Unified	12.45061	7.728911433	52.51318974	6.469394164
	Silos	9.413732737	6.404463235	13.85925941	1.773976075
	Hybrid	10.12243839	6.608817021	15.58653113	2.8070366
	Twin peaks (Netherlands)	11.33406	-	-	-
Total equity [% of total assets]	Unified	7.050711	2.927478286	19.94841573	2.915024271
	Silos	7.0978520	5.391110557	9.800694111	1.246123484
	Hybrid	6.81148604	3.339489858	13.58693133	2.780582728
	Twin peaks (Netherlands)	4.500101	-	-	-
Herfindhal Hirschman Index (HHI)	Unified	1162.922	183	3550	824.2961
	Silos	1102.5	459	1827	364.0779
	Hybrid	837.125	298	3160	649.0574
	Twin peaks (Netherlands)	2045	-	-	-
Bank nonperforming loans to total gross loans (%)	Unified	3.888187	0.3	17.9	3.415475
	Silos	6.68	0.9	19.3	5.574777
	Hybrid	3.6636904	0.2	10.4	2.803309
	Twin peaks (Netherlands)	2.13	-	-	-
Domestic credit provided by banking sector (% of GDP)	Unified	114.9163	46.27457	229.0432	49.92368
	Silos	139.068	35.02293	315.7515	87.22252
	Hybrid	148.98294	55.63713	227.9388	51.31893
	Twin peaks (Netherlands)	134.5991	-	-	-

Note: In the case when a certain supervision arrangement changed during the year, we considered it from the next year. Source: our calculations, based on ECB statistical data warehouse and World Bank database.

The indicators that measure the efficiency in the banking system (ROA and ROE) continuously deteriorated over the period, with a slight recovery in 2010 (less ROE, for the hybrid model). The best performances could be found in the silos model of financial supervision. There are not major differences regarding the dispersion of the results among the institutional supervisory models, however, one can notice the differences in the values registered by ROE, depending on the supervisory model. This is also confirmed by the minimum and maximum annual values for ROE. Those discrepancies could be

explained by the fact that the financial turmoil affected asymmetrically the performances of the national banking systems.

Directly connected with the evolution of the efficiency indicators, the level of nonperforming loans increased continuously during the analysed period. The silos supervisory model registered the best averages for ROA and ROE; however the level of nonperforming loans is almost double comparing with hybrid and unified supervisory models, and also registers the highest dispersion of the values at the national banking system level. With the exception of the indicator Total equity as percentage of total assets, in the silos supervisory system the solvability indicators show the lowest values. Thus, we can conclude that the banks in the countries that adopted the silos supervision system had a higher profitability, correlated lower levels of solvability, with the price of increasing the nonperforming credits, especially in the period 2009-2010.

Overall, the solvability indicators registered during the analysed period a slight improvement, but there are discrepancies at the level of national banking systems, especially in the case of unified supervisory models.

The banking concentration registered a decrease, and as result, an improvement in banking competition, with the exception of the banking systems in the countries with unified supervisory systems, where could be noticed a slight increase of the Herfindhal Hirschman Index (HHI). This demonstrates that the financial crisis determined adjustments in the market share and power of the banks in some national banking systems, The highest values were registered in the hybrid supervised banking systems, regardless a relatively high dispersion at the level of the banking system.

The financial intermediation, measured through the domestic credit provided by banking sector (% of GDP), registered a slight increase, beside the constraints determined by the current financial crisis. One explanation might be the continuous decrease of the GDP, on the background of a lower decrease in the level of credits granted. The differences between the supervisory models are relatively low regarding this indicator, however, are relatively high between the banking systems with the same supervision model.

Taking into account the degree of involvement of the central bank in the banking supervision, the main prudential and performance indicators can be found in Table 3.

Table 3: Main prudential and performance indicators in the EU27 banking systems (2007-2010), correlated with the involvement of the central bank in financial supervision

Indicator	Is central bank involved?	Mean	Min	Max	St. dev.
ROA	Yes	0.350782	-3.941705208	1.975263745	0.813866097
	No	-0.01766	-3.968981407	1.849591882	1.305193605
ROE	Yes	3.156871	-70.12131781	22.5176211	12.45842745
	No	-1.39581	-65.22110694	22.51491911	20.62093959
Overall solvency ratio [%]	Yes	12.63154	9.361497797	18.12163788	2.160351496
	No	15.49163	10.4759515	54.95577728	7.11650381
Tier 1 ratio [%]	Yes	10.09631	6.404463235	15.58653113	2.212276288
	No	12.93415	7.915694946	52.51318974	7.077696535
Total equity [% of total assets]	Yes	6.517372	2.927478286	13.58693133	2.175856218
	No	6.511695	3.283275622	19.94841573	3.097146185
Herfindhal Hirschman Index (HHI)	Yes	920.5147	183	2168	491.1693
	No	1282.625	309	3550	903.9876051
Bank nonperforming loans to total gross loans (%)	Yes	4.445	0.5	19.3	4.116157731
	No	3.338472	0.2	17.9	3.979390691
Domestic credit provided by banking sector (% of GDP)	Yes	123.6484	35.02293307	315.751503	67.82700684
	No	151.1136	46.27457112	229.0431638	55.27898536

Source: ECB statistical data warehouse and World Bank database.

One can notice a better level for the efficiency indicators, comparing with the solvability ones, in the case of the banking systems where the central bank is involved in the financial supervision. As well, could be noticed a higher dispersion of the values of the above mentioned indicators in the case of the banking systems where the central bank is not implicated in the supervisory process. In what concerns the level of nonperforming credits, the difference is insignificant, disregarding some discrepancies that could

be found at the level of national banking systems. In what concerns the degree of concentration, it is lower in the banking systems where the central bank is involved in supervision.

As conclusion, taking into account all the analysed indicators, it results that the best performances were registered in those EU countries that used the unified financial supervision model.

6. Conclusions

In the European Union, nowadays there are implemented several models of financial supervision, but the most common one is the unified model. Besides, there are several countries where the central bank is involved in supervising one or more financial sectors. Among those different models, the unified supervision model, without the involvement of the central bank, is the dominant one, disregarding a certain tendency during the financial crisis to concentrate the financial supervision at the central bank's level (Ireland and Luxembourg). Our analysis shows that the performances of the national banking systems in EU differ, from one supervisory system to another. This demonstrates not only that the effects of the crisis were different from one country to another, but also that the performances in what concerns the crisis management were different. As result, the model of financial supervision in different EU countries might be reconsidered, taking into account that the best performances were registered in those countries using the unified model of financial supervision.

7. Acknowledgement

This work was supported by the project "Post-Doctoral Studies in Economics: training program for elite researchers - SPODE" co-funded from the European Social Fund through the Development of Human Resources Operational Programme 2007-2013, contract no. POSDRU/89/1.5/S/61755

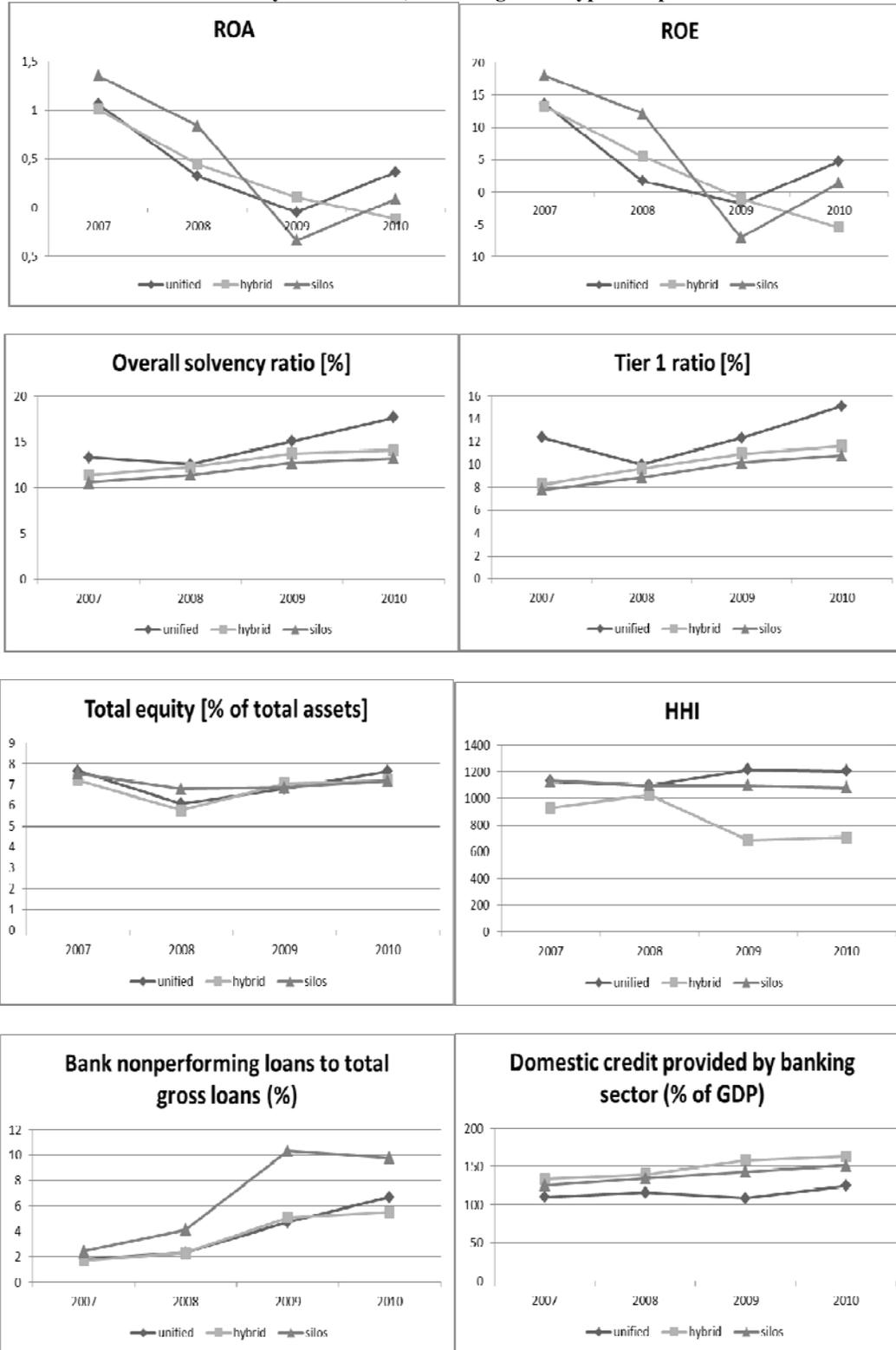
8. References

- Abrams, R. K., Taylor M. W. (2002) Assessing the Case for Unified Sector Supervision, *London School of Economics Financial Markets Group Special Papers*, 134, London: UK.
- Bini Smaghi, L. (2000) *Who Takes Care if Financial Stability in Europe?*, Chapter 2, in Open issues in European Central Banking, Mc Millan.
- Boot, A., Thakor A. (1993) Self-Interested Regulation, *American Economic Review*, 83, p. 206-212.
- Briault, C. B. (1999) The Rationale for a Single National Financial Services Regulator, *Financial Services Authority Occasional Papers*, 2, London, UK.
- Dewatripont, M., Tirole J. (1999) Advocates, *Journal of Political Economy*, 107, 1, p. 1-39.
- Dewatripont, M., Jewit, I., Tirole, J. (1999a) The Economics of Career Concerns, Part I: Comparing Information Structures, *Review of Economic Studies*, 66, p. 183-198.
- Dewatripont, M., Jewit, I., Tirole, J. (1999b) The Economics of Career Concerns, Part II: Applications to Missions and Accountability of Government Agencies, *Review of Economic Studies*, 66, p. 199-217.
- Davis, H., Green, D. (2008) *Global Financial Regulation. The Essential Guide*, Polity Press.
- Di Noia, C., Di Giorgio G. (1999) Should Banking Supervision and Monetary Policy Tasks Be Given to Different Agencies?, *International Finance*, 2:3, p. 1-18.
- Di Noia, C., Di Giorgio, G. (2001), Financial Regulation and Supervision in the Euro Area: A Four-Peak Proposal, *The Wharton Financial Institution Center*, WP 01-02.
- Eijffinger, S.C.W. (2001) Should the European Central Bank Be Entrusted with Banking Supervision in Europe?, Tilburg University.
- Gale, D., Vives, X. (1993) *Separation of Authority in Financial Regulation*, mimeo.
- Goodhart, Ch. A. E., Schoenmaker, D. (1995) Should the Functions of Monetary Policy and Banking Supervision be Separated?, *Oxford Economic Papers*, 47, p. 539-560.
- Giddy, I H. (1994) Who Should be the Banking Supervisors, paper presented at the seminar on Current legal issues affecting central banks, *International Monetary Fund*, May 10.
- Gulde, A-M., Wolf, H.C. (2004) *Financial Stability Arrangements in Europe: A Review* - OeNB Workshops no. 4, "Constitutional Treaty for an Enlarged Europe: Institutional and Economic Implications for Economic and Monetary Union".
- Garicano L., Lastra, R. (2010) Towards a New Architecture for Financial Stability: Seven Principles, *CEP Discussion Paper*, No 990, July.

- Hölmström, B., Milgrom P. (1991) Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design, *Journal of Law, Economics & Organization*, 7, p. 24-52.
- Kane, E. J. (1984) Regulatory Structure in Futures Markets: Jurisdictional Competition between the SEC, the CFTC and Other Agencies, *Journal of Futures Markets*, 5, p 367-384.
- Kane, E. J. (1996) De Jure Interstate Banking: Why Only Now?, *Journal of Money, Credit and Banking*, 28 (2), p. 141-161.
- Kupiec, P. H., Whitem, P. (1996) Regulatory Competition and the Efficiency of Alternative Derivative Product Margining Systems, *Journal of Futures Markets*, 16, p. 943-969.
- Lastra, R. (1992) The Independence of the European System of Central Banks, *Harvard International Law Journal*, Vol. 33, No. 2, Spring, p. 475-519.
- Llewellyn, D.T. (1999) The Economic Rationale of Financial Regulation, *FSA Occasional Paper*, No. 1, London, Financial Services Authority.
- Llewellyn, D. T., *Institutional Structure of Financial Regulation and Supervision: The Basic Issues*, World Bank seminar “Aligning Supervisory Structures with Country Needs, Washington DC, 6th and 7th June, 2006.
- Masciandaro, D. (2004) Unification in financial sector supervision: The trade-off between central bank and single authority, *Journal of Financial Regulation and Compliance*, Volume 12 Number 2.
- Masciandaro, D. (2007) Divide et impera: Financial supervision unification and central bank fragmentation effect, *European Journal of Political Economy*, vol. 23(2), June, p. 285-315.
- Masciandaro, D. (2010) Reforming regulation and supervision in Europe: Five missing lessons from the financial crisis, *Intereconomics: Review of European Economic Policy*, vol. 45(5), p. 293-296.
- Masciandaro, D, Quintyn, M. (2010) Institutions Matter: Financial Supervision Architecture, Central Bank and Path-Dependence. General Trends and the South Eastern European Countries, *South-Eastern Europe Journal of Economics*, 1 (2010), p. 7-53.
- Romano, R. (1997) The Political Dynamics of Derivative Securities Regulation, *Yale Journal of Regulation*, 14.
- Romano, R. (2001) *The Need for Competition in International Securities Regulation*, Mimeo, Yale International Centre for Finance, June.
- Shleifer, A. (1985) A Theory of Yardstick Competition, *Rand Journal of Economics*, 16, p. 319-327.
- Taylor, M. (1995) Twin Peaks: A Regulatory Structure for the New Century, *Centre for Financial Innovation*, London: UK.

Annex 1

The evolution of the main performance and prudential indicators in the period 2007-2010, for the analysed countries, according to the type of supervision



A FINANCIAL-ACCOUNTING APPROACH TO PERFORMANCE, IDENTIFYING FINANCIAL KEY COMPONENTS

TANASĂ Florentin-Emil

Ph. D. Student, Faculty of Economics and Business Administration/Doctoral School of Economics, Alexandru Ioan Cuza University, Iași, Romania, tanasa.florentinemil@yahoo.com

HOROMNEA Emil

Ph. D. Professor, Faculty of Economics and Business Administration/Doctoral School of Economics, "Alexandru Ioan Cuza" University, Iași, Romania, emilhoromnea@yahoo.com

UNGUREANU Sebastian

Ph.D. Student, Faculty of Economics and Business Administration/Doctoral School of Economics, "Alexandru Ioan Cuza" University, Iași, Romania, sebastian_ungureanu2000@yahoo.com

Abstract: *The purpose of this research is the presentation of an accounting and financial perspective on performance by identifying financial components that will facilitate a true and fair view of the target parameter. In this context, the study aims at identifying factors acting on the rate of global financial autonomy to develop relevant decisions on the funding structure of the company.*

The results show that the assumptions proposed at the level of the analyzed sample, by using quantitative data analysis methods, have been validated. There have been also determined the relationship between statistical variables and factorial axes, respectively the global financial autonomy rate model has been validated.

Key words: performance, financial analysis, global financial autonomy, modern management.

JEL classification: C 58, M 40, M 41.

1. Introduction

The financial and accounting information is situated at the point of accounting and financial analysis intertwining (represented by the very practical proof of the change in terminology introduced by IASB in the generic name of the standards that it produces, from the IAS - International Accounting Standards - to the IFRS - International Financial Reporting Standards).

For a long time, assessing the relationship between financial and accounting analysis focused on identifying accounting as privileged source of information for financial analysis. This is where the common concern of the specialists comes from, with view to ensuring the quality of this information (with all adjacent features). New developments have shown, however, other reading keys for the relationship between analysis and accounting, with importance for both the practitioner and the researcher.

During the current period, the modern management issues involve the use of methods and models, mostly statistical and mathematical (econometric), based on which we can obtain relevant indicators, in order to establish financial performance and to guidance the company's development strategy.

2. The Research Methodology

The research goal is to address accounting and financial performance by identifying the main financial components, by way of which an accurate image of this objective parameter can be obtained. At the same time, the study also aims at identifying factors acting on the rate of global financial autonomy, an important indicator in assessing the business performance.

The study is oriented towards a positivist approach, of the logical type, in establishing the working hypotheses. In this respect, with view to validating the hypothesis proposed at the level of the analyzed sample, quantitative methods of data analysis will be used to lead to obtaining research results.

3. Working Hypothesis

On the basis of the above mentioned aspects, we plan to test and validate the following working hypotheses:

$I_p I$: - identifying the links, the associations among statistical variables, i.e. the factorial axes, which explain the large differences among statistical units. Thus, in this study, we aim to highlight the main

financial components, based on which solid decisions can be made as regards the company's performance;

- highlighting the similarities, namely the differences among the statistical units under focus for all registered variables;
- explaining similarities, namely the differences among individuals in terms of the variables under focus;

I_p 2: - determining the main influencing factors, acting on the rate of global financial autonomy, which forms an important indicator in assessing the performance of a company. For this approach we have made the following steps:

- building an econometric model as estimated equation of the multiple regression model of the rate of global financial autonomy;
- estimating the model parameters;
- testing parameters and the proposed model;
- testing the model hypothesis.

4. Target population and analyzed sample

In the present study, the target population is represented by companies listed on Bucharest Stock Market. The sample contains a total of 31 companies, chosen randomly, out of which 17 companies are listed under the first category and 14 companies are listed under the second category of Bucharest Stock Market.

In terms of the activity of the companies under focus, the sample structure is as follows: 26% represent service companies, 7% are companies active in trade and 67% are industrial companies.

5. Variables analyzed and the data source

To achieve the research objectives, we propose to examine a series of numerical variables, scale type. The independent variables are rates that describe the structure of assets and liabilities, and also performance rates, summarized in Table 1.

For each variable considered, the records were collected from financial statements for the financial year 2010, of the analyzed companies listed on the site of Bucharest Stock Exchange.

Table 1: Variables used in the study

Symbol	Variable Description	Mode of calculation
R ₁ =Rate of financial earning capacity	Return on company sales	Net result / Turnover
R ₂ =Rate of fixed assets	Level of company's capital investment	Fixed assets/Total assets
R ₃ = Rate of general cash flow	Capacity of the current assets to fund liabilities with maturity <1 year	Current assets / current debts
R ₄ =Rate of time loan	The extent to which liabilities > 1 year part in forming the total resources of funding	Debts with maturity >1 year /Total assets
R ₅ =Rate of global financial autonomy	The share of own financial resources in the total amount of the company's resources	Equity / Total liabilities
R ₆ =Rate of global indebtness	Dependence of the company to financial resources from third parties	Total debt / Equity

Source: personal projection

6. Methods of data analysis

In order to obtain the research results that will lead to validation of working hypotheses, we suggest for study, several methods of data analysis, specific to financial analysis, and to the advanced statistics. Thus, with view to obtaining financial ratios, we used the reports technique - TR, on the financial statements of the companies in the sample studied. Subsequently, to identify links among statistical variables, we used the main component analysis - ACP.

It is worth mentioning that the reports technique is a widely used method of financial analysis, which consists in the calculation and interpretation of indices determined by reporting positions or position aggregates in the financial statements, related to the same financial year, to assess the status of a company (Mironiuc, 2006, p.21).

Introduced for the first time by Karl Perason in 1901, the Analysis of the Main Components is a multivariate descriptive method, whose practical use is quite recent, due to the current computer working

tools. This method follows the maximum possible synthesizing of the data analyzed, with minimal losses, to facilitate the interpretation of a large number of initial data, but also to identify their common nature.

The basic principle of this method consists in reducing the number of variables analyzed, by replacing them with two or three latent variables, eliminating co linearity and also facilitating the analysis. Thus, starting from a variety of baseline variables, X_i ($i = 1 \dots n$), new variables are determined, named **factors** or **components** of the form C_j ($j = 1 \dots m$), where $C_j = b_{j1}X_1 + b_{j2}X_2 + \dots + b_{jn}X_n$ and $m \leq n$. In ACP, the main components determined by linear combination of the original variables are independent of each other.

Specific to this method of analysis is the assumption of *independence of the main components*, that can be validated by several tests, including: χ^2 test statistic (for testing a connection between variables) and the *KMO statistic* (Kaiser-Meyer-Olkin, to determine the intensity of this link). *The KMO statistic* is defined on the interval [0,1]:

- KMO values below 0.5 indicate significant links;
- between 0.5 and 0.6 indicates the existence of mediocre;
- values between 0.6 and 0.7 indicate acceptable intensity links;
- values between 0.7 and 0.8 indicate the existence of good links;
- KMO values above the threshold of 0.8 indicate the presence of very good links;
- 0.9 and higher values indicate that the solution obtained from the ACP is excellent. Currently, estimation of components can be performed using statistical software.

Correlations between original variables and main components can be represented graphically, using the "circle of correlation", as follows: the main components are represented on the factorial axes, graduated from -1 to +1, where the zero point shows that there is no link, and original variables are represented by coordinate points defined by the correlation coefficients between the original variables and principal components (Jaba, Robu, 2011, p.41).

II. Main Components Analysis.

SPSS data processing reveals that the companies in the analyzed sample have an average commercial return of 10.82%, with a standard deviation of 39.69% of this value, indicating significant differences in the rate of commercial return as regards the companies analyzed and are listed on Bucharest Stock Market.

Table 2: Average level and standard deviation

Ref. No.	Mean	Std. Deviation	Analysis N
1	.108284	.3969859	31
2	.566945	.2181358	31
3	4.095584	7.9889866	31
4	.093023	.1173002	31
5	.666048	.2054798	31
6	.672877	.6307077	31

Source: Processing by way of SPSS program

The Chi2 test statistic and the KMO statistic

Statistics is used to test the hypothesis of independence of the variables studied. For this, the following statistical hypotheses are made:

H0: the independence hypothesis

H1: the dependency hypothesis

**Table 3: The KMO test statistics values and of the Chi2 statistics
KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.577
Bartlett's Test of Sphericity	Approx. Chi-Square	87.688
	df	15
	Sig.	.000

Source: Working with SPSS program

The calculated value of Chi2 test statistics for the example considered is: $\text{Chi}^2 = 87.688$. The significance level corresponding to this value is: $\text{Sig} = 0.000 < 0.05$, thus the hypothesis H_0 is rejected. There is thus a 95% guarantee that there are significant statistical links between the statistical variables; the correlation matrix is not a unit matrix. The meaning and intensity description of these links is made by applying the ACP.

The identification of the relationship existing among variables is facilitated by the KMO statistics calculation, a measure of the sample adequacy. The KMO test statistical value for this study is 0.577, indicating that there is a statistical association between variables on the one hand and the original variables that entered the structure of main components produced on the other hand, according to data presented in Table. 4, therefore, the main component analysis can be applied.

Proper values associated with each factorial axis and variance explained by each factorial axis

The ACP application on the 6 variables originally introduced in the analysis ($X_i, i = 1, \dots, 6$) led to the identification and estimation of main components on which relevant decisions can be made in evaluating the company performance.

For choosing the number of factorial axes and components, the appropriate vector values are taken into account, values that are higher than one (*Kaiser's criterion, 1960*). According to Figure no. 1 and Table no. 4, two main components the data will be chosen following the presented analysis.

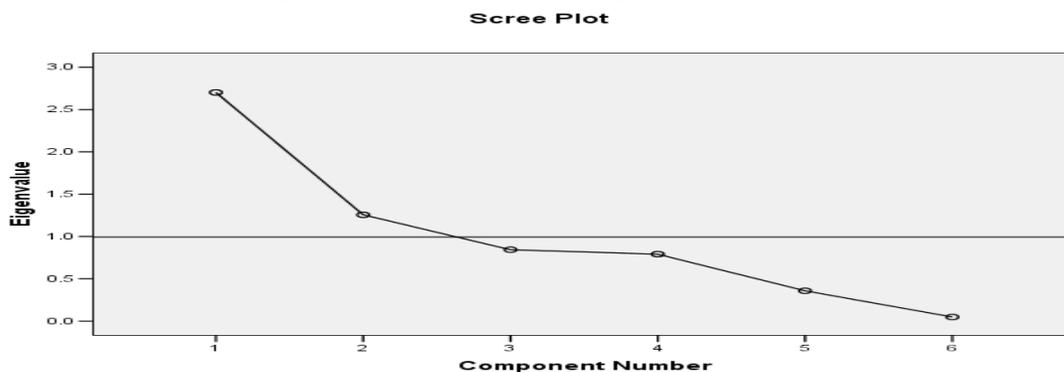
Table 4: The proper values of the correlation matrix and the variance explained by the factorial axes
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.702	45.029	45.029	2.702	45.029	45.029
2	1.256	20.937	65.966	1.256	20.937	65.966
3	.844	14.062	80.028			
4	.791	13.185	93.212			
5	.358	5.974	99.186			
6	.049	.814	100.000			

Source: Processing by way of SPSS program

In the Total Variance Explained output, the proper values of the correlation matrix are: $R_1 = 2.702, R_2 = 1.256, R_3 = 0.844, R_4 = 0.791, R_5 = 0.358, R_6 = 0.04$. The largest proper value $R_1 = 2.702$, is the one corresponding to the first factorial axis. You can also appreciate the fact that the variance explained by the two components identified, combined, is 65.966% (45.029% explained by the first component, 20.937% explained by the second component) of the total variance of the cloud of points (graphical representation of variables analyzed values).

Figure 1: Graphical representation of the proper values of the correlation matrix



Source: Processing by way of SPSS program

The variable coordinates on the factorial axis, their contributions to forming factorial axis and graphical representations.

Table 5: Matrix Component

	Component	
	1	2
R1	.476	.115
R2	-.161	.915
R3	.567	-.502
R4	-.685	.123
R5	.943	.195
R6	-.877	-.316

Table 6 : Component Score Coefficient

	Component	
	1	2
R1	.476	.115
R2	-.161	.915
R3	.567	-.502
R4	-.685	.123
R5	.943	.195
R6	-.877	-.316

Source: Processing by way of SPSS program Extraction Method: Main Component Analysis. 2 components extracted.

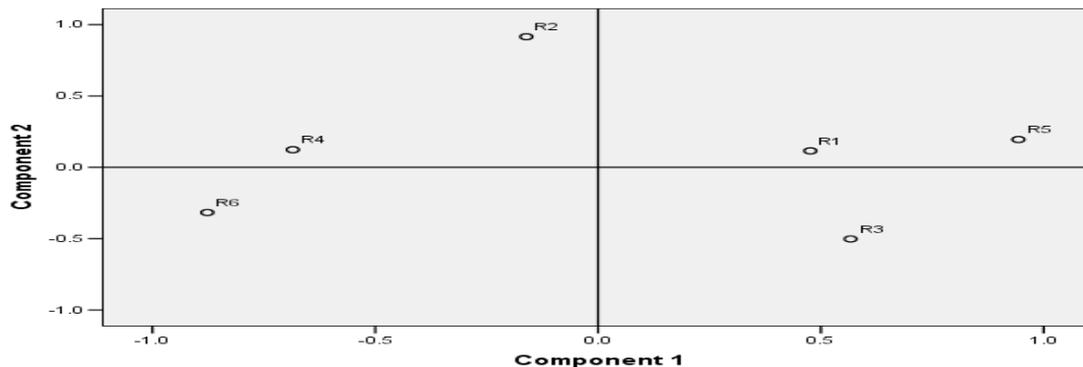
In the diagram obtained in SPSS 13.0, in Figure 2, the two main components and also the influence of each variable on each component are graphically represented. Moreover, the graphical layout of components is possible only if their number is equal to or higher than two.

The analysis of Table 5 shows that the first factorial axis is a new variable, defined by linear combination of initial variables of the form: $F1 = 0.943 \times R5 - 0.877 \times R6 - 0.685 \times R4$. The three variables shown in Figure no 2 are strongly correlated with the first factorial axis (the formation of the first factorial axis is explained by these variables), suggesting that those variables significantly explain the differences between statistical units. Between variables R4 (term loan rate) and R6 (global financial autonomy rate) there is a strong direct link (absolute high values of the coordinate, while between the variables (R4, R6) and R5 (global loan rate), there is a strong inverse link (significant differences). The formation of the second factorial axis, is explained by variable R2 (fixed assets rate), which shows a different pattern of development of fixed assets rate as compared to other rates.

At the level of the analyzed sample, the first component is significantly influenced by the level of R4, R6, R5. These indicators describe the financing structure chosen by the company. The referred component will bear the title **The Component of the Funding Activity (CFA)**. The second component is significantly influenced by the level of R2. The indicator describes the degree of capital investment of the company, and this component will be named the **Structure of the Asset Component (CSA)**.

The analysis of Table 6 indicate that the component scores are determined as a linear combination of financial indicators introduced in the analysis. Thus, following the application ACP, two equations result from the two components: $CFA = 0.349 \times R5 - 0.325 \times R6 - 0.254 \times R4$, $CSA = 0.728 \times R2$. Of the proposed equations it can be observed that, at the level of CFA, the relationship between the term loan rate value and the global loan rate is inversely proportional.

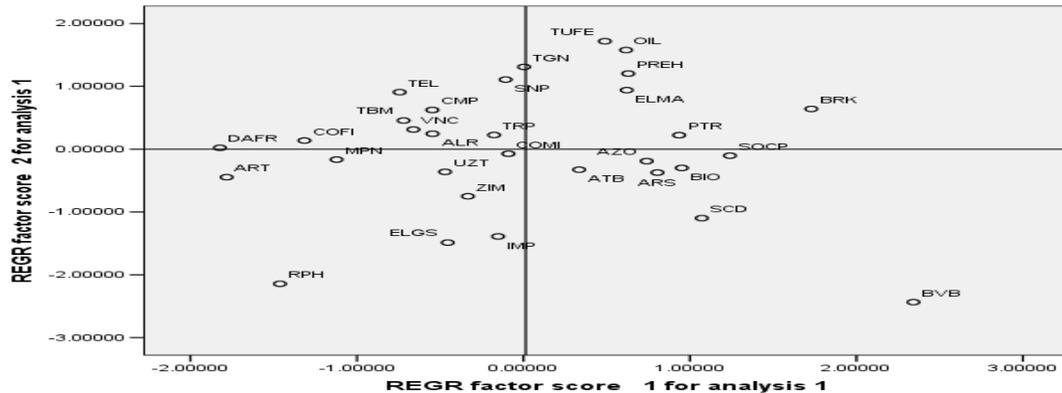
Figure 2: Representation of the variables on the first two factorial axes.
Component Plot



Source: Processing by way of SPSS program

Representation of statistical units on the first two factorial axis

Figure 3: Representation of companies in the first two factorial axis system



Source: Processing by way of SPSS program

The analysis performed on figure no. 3 (highlighting similarities, that differences between individuals according to the recorded variables), and the correlation of these results with statistical variables allow us to formulate the following conclusions:

- The first factorial axis shows a differentiation of the companies into two main groups: first group consists of companies BRK (SSIF Broker), SOCP, SCD, PTR, BIO (to an extreme position in the right side of the graph), and a second group is formed DAFR, ART, COFI, MNP (with an extreme position to the left side of the graph). The companies in the first group are characterized by a high rate of global financial autonomy, a value of equity of 60% in the total liabilities value, unlike the companies grouped in the second group. On the other hand, these companies are characterized by low levels of term indebtedness rate and the global indebtedness rate, as opposed to companies DAFR, ART, COFI, MNP, which have high rates of these indicators. A transposition of these results on company performance leads us to the conclusion that companies in the first category will not face difficulties in the near future in terms of their ability to refund loans.
- The second factorial axis brings out the companies TUF, OIL, TGN, PREH, TEL, SNP, ELMA, which are characterized by high values of the fixed assets rate, over the average companies analyzed, unlike companies such as: BVB, IMP, SCD, which record low values of this indicator.

III. Multiple linear regression analysis

Profitability is the economic category which expresses the company's ability to obtain profit, reflecting its performance. The major objective of the company is the property size of participants to the "life" of the company, as well as the rise of this indicator with view to ensuring their own development. Achieving this objective is subject to carrying out a profitable activity to allow compensation of the production factors and of the capital inputs used. In this context, one of the indicators that quantify the performance of an enterprise is the commercial rate of return.

Viewing the issue

This study aims at determining factors of influence acting on the rate of global financial autonomy, which is an important pillar in assessing the performance of a company. In this study, following the study the indicators that quantify best the company's performance, we consider as being significant the following financial indicators: commercial return rate, fixed assets rate, general cash flow rate, term loan rate, the rate of global debt.

Defining the model

For the analysis of the sample rate of the global financial autonomy of the companies listed on Bucharest Stock Market, drawn randomly, we use a multiple linear regression based on data extracted

from financial statements for 2010, presented in section 'financial statements' of each company. The model has the following form:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon \quad \text{where:}$$

- Y: global financial autonomy rate (expressed in percentages) – dependant variable

Independent variables are as follows:

- X_1 : commercial earning capacity rate (expressed in percentages);
- X_2 : fixed assets rate (expressed in percentages);
- X_3 : general cash flow rate (expressed in percentages);
- X_4 : term indebtness rate (expressed in percentages);
- X_6 : global indebtness rate (expressed in percentages);
- ε : random variable error (residue);
- $\alpha, \beta_i, i = \overline{1,5}$: regression coefficients.

Estimation of the model parameters

The values estimate punctually by the Backward method are presented in table no. 7.

Table 7: Punctual estimations of the liniar multiple regression model parameters

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.852	.021		40.711	.000
	R3	.004	.002	.153	2.485	.019
	R4	-.227	.115	-.130	-1.978	.058
	R6	-.269	.022	-.825	-12.066	.000

a. Dependent Variable: R5

Source: Processing by way of SPSS program

Based on the data in Table no. 7 (**Coefficients**), we can obtain the estimated equation of the linear multiple regression model of the global financial autonomy rate.

$$Y = \alpha + \beta_3 X_3 + \beta_4 X_4 + \beta_6 X_6 = 0,852 + 0,004 X_3 - 0,227 X_4 - 0,269 X_6$$

Interpretation:

The values of the model are as follows:

$\alpha = 0.852$, which means that when the values of all independent variables X_3, X_4, X_6 are 0, the dependent variable value (global financial autonomy ratio) is equal to 0.852, the share of equity in the structure of liabilities is 85.20%.

$\beta_3 = 0.004$, which means that the dependent variable (Y), i.e. the global financial autonomy rate increases by 0.4% when the general cash flow rate (X_3) increases by 1% and the other variables remain constant;

$\beta_4 = -0.227$ which means that the dependent variable (Y), i.e. that the global financial autonomy rate decreases by 22.7% when term loan rate increases by 1% and the other variables remain constant;

$\beta_6 = -0.269$ which means that the dependent variable (Y), i.e. the global financial autonomy that rate drops by 26.9% when the term loan rate increases by 1% and the other variables remain constant;

Testing the parameters and the model proposed

For testing the parameters, the Student test is used.

Stages of testing

Formulating the assumptions:

Testing the rate of global financial autonomy in relation to the general cash flow rate starts from the following assumptions:

H0: $\beta_6 = 0$ – the global financial autonomy rate is not significantly influenced by the rate of global debt

H1: $\beta_6 \neq 0$ – the global financial autonomy rate is significantly influenced by the global debt rate

Choosing the test

For testing the significance of the regression coefficient β_6 , the Student statistic is used, defined by the ration:

$$t = \frac{\hat{\beta}_1 - \beta_1}{\hat{\delta}_{\beta_1}}$$

The theoretical value of the test.

The table Student reads the theoretical value $t_{\alpha/2;n-3} = 4,303$.

Table 8: The Student Test

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
R6	5.940	30	.000	.6728774	.441532	.904223

Source: Processing by way of SPSS program

Test calculated value

The level of the sample $t_{calculat} = \frac{b_1}{S_{\hat{\beta}_1}} = 5,940$

Decision:

Comparing t_{calc} with t_{tab} , it can be noticed that $t_{calc} > t_{tab}$, therefore the null hypothesis is rejected, the correlation coefficient being significantly different from zero. Consequently, the model is correctly specified and be retained.

The same results are obtained by comparing the test significance (Sig) with the chosen significance threshold. $Sig = 0.000 < 0.05$, so the decision to reject the null hypothesis for the parameter β_6 . The Student test is also used to verify the hypothesis whether the average error is zero or not. The analysis of the one-sample test output allows the decision to accept the null hypothesis, i.e. the assumption that the average errors does not significantly differ from the zero value (Test Value = 0).

The regression model testing

Testing the multiple linear regression model is made by way of F test, according to the following approach:

Formulating hypothesis:

$H_0 : \alpha = \beta_3 = \beta_6 = 0$ – the model is not significant or does not explain the dependence among variables;

H_1 : not all coefficients are 0 simultaneously – the model is significantly statistical.

Choosing the test

For testing the model, the Fisher statistic is used. For two independent variables ($k = 3$) the statistic is:

$$F = \frac{\hat{\eta}^2}{1 - \hat{\eta}^2} \frac{\eta - k}{k - 1} = \frac{\hat{\eta}^2}{1 - \hat{\eta}^2} \frac{\eta - 4}{2} \approx F(2, n - 3)$$

The theoretical value of the test.

The theoretical value can be read in the Fisher table $F_{\alpha,(2,n-3)} = F_{0,05,(2,28)} = 3,340$

The calculated value of the test

At the sample level, a calculated value of the Fisher statistic is determined: $F_{calc} = \frac{R^2}{1 - R^2} \frac{n - 3}{2} = 89,631$

Table 9: Estimating the correlation report and the determination report

Model Summary ^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.953 ^a	.909	.899	.0654278

a. Predictors: (Constant), R6, R3, R4

b. Dependent Variable: R5

Source: Processing by way of SPSS program

Tabel no. 10 ANOVA

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.151	3	.384	89.631	.000 ^a
	Residual	.116	27	.004		
	Total	1.267	30			

a. Predictors: (Constant), R6, R3, R4

b. Dependent Variable: R5

Source: Processing by way of SPSS program

Decision:

For the significance threshold of 0.05, we can notice that the calculated value of the test is higher than the theoretical value, i.e. rejecting the null hypothesis with a 0.95 probability. In SPSS, the Fisher test is carried out using the variance decomposition process, dependent on two components: variances explained, given by the regression model and residual variation.

The ANOVA table presents the estimates of two components of variation, appropriate degrees of freedom, estimates of the explained and the residual variances, the calculated value of the Fisher test and the test significance.

The estimated variables of the correlation ratio ($R = 0.953$) and the report of determination ($R^2 = 0.909$), in Table. 9, indicate that, in the multiple linear regression model chosen, simultaneous variation of independent variables explain in a proportion of 90.9%, the variation of the dependent variable. Therefore we can state that the model is useful.

7. Conclusions

The two working hypotheses proposed in this study have been validated by the empirical results obtained, leading to fulfilling the research objectives. Therefore, links have been identified, associations among statistical variables, respectively, we identified the factorial axes, which explained the large differences between the statistical units. In the sample analyzed, the first component is significantly influenced by the R4, R6, R5 level. These indicators describe the financing structure chosen by the company. This component will be called the **financing activity component (CFA)**. The second component is significantly influenced by the level of R2. This indicator describes the degree of the company's capital investment, and this component will be called the **structure of the asset component(CSA)**.

In the second part of the study, we have determined the main factors of influence acting on the rate of global financial autonomy, which forms an important indicator in assessing the performance of a company. For this process, we followed several steps: building an econometric model under the form of a multiple regression model estimated equation of the global financial autonomy rate, estimating the model parameters, testing the parameters and the proposed model, testing the model hypothesis. To sum up, following the study made, the factors that have a significant influence on the rate of global financial autonomy are as follows: general liquidity rate, term loan rate and the global debt rate.

After testing the linear multiple regression model assumptions, the model of the global financial rate autonomy is accepted as valid, being represented by the equation:

$$Y = \alpha + \beta_3 X_3 + \beta_4 X_4 + \beta_6 X_6 = 0,852 + 0,004 X_3 - 0,227 X_4 - 0,269 X_6$$

The model was estimated using the data selected from the annual financial statements for the financial year 2010 of the sampled companies, companies listed under I and II categories of the Bucharest Stock Exchange. The model can be used for making predictions in the development of relevant decisions on the funding structure of the company.

8. References

- Andrei, T.; Boubonnais R.(2008) *Econometrie/Econometrics*, Ed. Economică, București;
- Gujarati, D. (2004) *Basic Econometrics*, the McGraw-Hill Companies, New York;
- Horomnea E. (2012) *Dimensiuni Științifice, Sociale și Spirituale în Contabilitate*, Ed. TipoMoldova, Iași, 2012;
- Jaba, E. (2008) *Econometrie aplicată/Applied Econometrics*, Ed. Universității "Alexandru Ioan Cuza", Iași;
- Jaba, E. (2002) *Statistică, ediția a III/Statistics*, Ed. Economică, București;
- Jaba, E.; Robu I.B. (2011) *Obținerea probelor de audit pentru testarea „Going Concern”, folosind metode statistice avansate în analiza influenței factorilor asupra ratei îndatorării globale/Obtaining audit evidence for testing “Going Concern”, using advanced statistical methods to analyze the influence of global loan rate*, Revista „Audit Financiar”, București;
- Jaba, E.; Grama, A. (2004) *Analiză statistică cu SPSS sub Windows/Statistical Analysis with SPSS under Windows*, Ed. Polirom, Iași;
- Pintilescu, C. (2007) *Analiză statistică multivariată/Multivariate Statistical Analysis*, Ed. Universității "Alexandru Ioan Cuza", Iași;
- Mironiuc, M. (2006) *Analiză economico-financiară: elemente teoretico-metodologice și aplicații/Economic and financial analysis: theoretical and methodological elements and applications*, Ed. Sedcom Libris, Iași.
- www.bvb.ro

CONSIDERATIONS OVER THE METHODOLOGY OF FINANCIAL ANALYSIS AND ITS LINKAGE WITH BANKABILITY OF EUROPEAN FUNDED INVESTMENT PROJECTS

TRENCA Ioan

Ph. D. Professor, Faculty of Economics and Business Administration, Babeş-Bolyai University, Cluj-Napoca, Romania, ioan.trenca@econ.ubb.ro

PETRIA Nicolae

Ph. D. Associate profesor, Faculty of Economics, Lucian Blaga University of Sibiu, Sibiu, Romania, nic_petria@yahoo.co.uk

DROJ Laurențiu

Teaching assistant/Ph. D. Student, Faculty of Economics, University of Oradea, Oradea, Romania

Abstract: *European funding is considered to be one of the hot topics in Romania and all over Eastern Europe since its novelty and its expected capacity to improve the life of the newly integrated European citizens. The linkages between the European Financial Support Programmes, the private financing performed by the banking sector and the private companies which are intending to use the structural funds to finance their investments is obvious. The present paper analyzed these linkages, creates a case study and underlines several common characteristics of Cost Benefit Analysis and Bankability methodology.*

Key words: European funding, banking, cost benefit analysis, NPV, IRR

JEL classification: G 17, G 21, F 35, O 16, H 43, C 63, C 61

1. Introduction

The integration of the Romania into European Union brought new opportunities for the Romanian private enterprises both concerning the accession of their products and services to the single market and also accession of additional co-financing for funding their business infrastructure investments (Droj, 2010). Access to European funding and its efficient absorption constitutes a key issue in these years both at the level of state level decision makers, at the level of financing institutions and at the level of the decision makers within the companies.

The linkages between the European Financial Support Programmes, the private financing performed by the banking sector and the private companies which are intending to use the funds to finance their investments is obvious. In case of investment projects, especially those proposed to be financed by the Sectorial Operational Programme "Increase of Economic Competitiveness" (further referred to as SOP IEC) or by the European Agricultural Fund for Rural Development (further referred to as EAFRD), the financial proposal and the investment plan proposed by the beneficiaries has to be accompanied by a Bank Comfort Letter, for their own contribution (between 30%-55%). This Bank Comfort Letter is accompanied by thorough analysis performed by the banking sector regarding not only the capacity of a project to be eligible for financing but also about its bankability.

Taking into consideration these aspects a close, but indirect, connection must be realized between the private financial institutions, part of the banking sector, and the management authorities of the structural programs, through the beneficiaries. In this context the proposed paper is trying to deal with one of the most problematic issues at the level of a project: correlation of the indicators of financial analysis, especially of the cost benefit analysis, requested by the financing authorities and the mandatory financial analysis indicators imposed by the banking system in order to ensure the loan for co-financing.

In order to accomplish these goals the authors of this paper described and briefly analyzed the financing programme SOP IEC of the European Union and later considered the financial criteria which stand behind the selection of a successful European funded investment project within this programme. This must also be approved for receiving banking financing to support both the application of the project and after the approval of the project its implementation. In the final section of the paper a study case, a financial analysis, based on a Romanian company proposing an investment project is presented and several conclusions are highlighted.

2. Short overview in the European funding programs available at the level of Romania for financing investment projects proposed by SMEs and larger companies

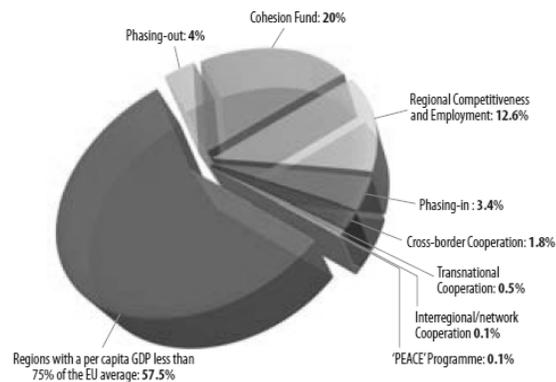
As mentioned in the previous chapter European funding is considered to be one of the hot topics in Romania and all over Eastern Europe since its novelty and its expected capacity to improve the life of the newly integrated European citizens (Droj, 2011a) both by financing public and private strategic investments in various fields of activities: public urban infrastructure, transportation services, agriculture infrastructure, social and educational infrastructure, tourism and business public and private infrastructure, human resources, etc. One of the main goals of these European Funding programmes are to implement European Union Cohesion policies.

The main instruments for improvement of the competitiveness of the “weaker” regions were established at the level of the European Union by creation of the European Regional Development Fund (ERDF) and the European Social Fund (ESF), otherwise known as the Structural Funds, as well as the Cohesion Fund (European Commission, 2007). Through these instruments European Commission invests in thousands of projects across all of Europe’s regions to achieve its primary task: to promote economic and social cohesion by reducing these disparities between Member States and regions (European Commission, 2009).

Since the Cohesion Policy is one of the most important targets of the European Union its budget for the period 2007–2013 is €347 billion EUR, and represents the single largest source of financial support at EU level for investment in growth and jobs, designed to enable *all regions* to compete effectively in the internal market as its mentioned in the previously mentioned document. The Cohesion policy is the first European policy, ever, which surpasses as financial allocation the Agriculture Policy (Droj, 2011b).

The main message of the Cohesion Policy – Convergence objective for 2007-2013 as published by European Union (2007) is that it: “aims to stimulate growth and employment in the least developed regions. It highlights innovation and the knowledge-based society, adaptability to economic and social changes and the quality of the environment and administrative efficiency”. The „Cohesion Policy 2007-2013 National Strategic Reference Frameworks” considers that the Cohesion policy is designed to bring „concrete results, furthering economic and social cohesion and reducing gaps between development levels in the various regions.”

Figure 1: EU Cohesion Policy (2007-2013)



Source: European Union (2007) in Droj (2011)b

The three main objectives of the Cohesion policy are:

- **convergence**, under which the poorest Member States and regions (GDP per inhabitant less than 75 % of the Community average) are eligible, accounting for around 82 % of the funds for 2007 to 2013;
- regional **competitiveness and employment**, accounting for around 16 % of the funds; all regions which are not covered by the convergence objective or transitional assistance are eligible for funding;
- European **territorial cooperation**, accounting for around 2.5 % of the funds available.

Except the funds which are proposed to be delivered to national, regional and local authorities, who benefit from a considerable amount of the Cohesion Funds, other eligible beneficiaries are private companies operating in the field of production and services. These funds constitute a novelty for the Romanian companies and taking into consideration the huge needs for improvement of the competitiveness of the private economy are considered to be very attractive to private companies and in this context generate a big interest from these types of beneficiaries.

Eligible beneficiaries for the first time, the private companies benefit of increased opportunities for accessing European Funding which gives them a better chance for increasing their competitiveness and for extending distribution of their products and services on the entire European market and beyond. Under the cohesion policy ERDF is the main structural fund financing private infrastructure investments, especially for companies operating in industry and service provision. The main goal of ERDF is to strengthen economic and social cohesion in the European Union by correcting imbalances between its regions. In short, the ERDF finances (European Commission, 2006a):

- direct aid to investments in companies (in particular SMEs) to create sustainable jobs;
- infrastructures linked notably to research and innovation, telecommunications, environment, energy and transport;
- financial instruments (capital risk funds, local development funds, etc.) to support regional and local development and to foster cooperation between towns and regions;
- technical assistance measures.

In practice, all development areas are covered by ERDF(European Commission, 2006b): transport, communication technologies, energy, the environment, research and innovation, social infrastructure, training, urban redevelopment and the conversion of industrial sites, rural development, the fishing industry, tourism and culture. Under ERDF, the most important infrastructure financing programme for the Small and Medium Enterprises(SME) operating in Romania is considered to be the Sectorial Operational Programme “Increase of Economic Competitiveness” (further referred to as SOP IEC) which offers financial support for the consolidation and modernization of productive sector through investments(Guvernul României, 2011).

The SOP IEC aims to strengthen the strategic focus of the Economic and Social Cohesion policies across Romania, and to make the correct and appropriate linkages to the European policies and the Lisbon Strategy for growth and job creation. In order to be financed within this programme the SMEs have to present a business plan containing a cost benefit analysis study. The **general objective** of SOP is the increase of Romanian companies’ productivity, in compliance with the principle of sustainable development, and to reduce the disparities compared to the average productivity of the European Union(Guvernul României, 2011). The target is an average annual growth of GDP per employed person by about 5.5%. This will allow Romania to reach an approximate of 55% of the EU average productivity by 2015.

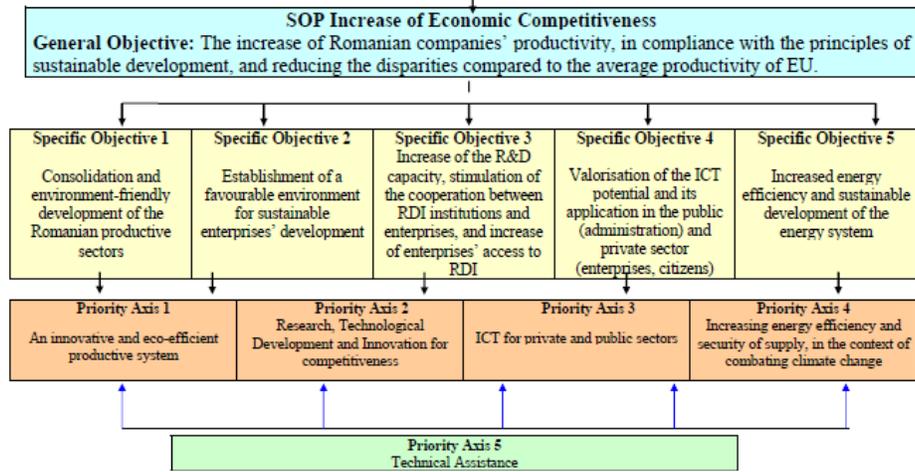
The specific objectives of the SOP “Increase of Economic Competitiveness” are:

- Consolidation and environment-friendly development of the Romanian productive sector,
- Establishment of a favorable environment for sustainable enterprises’ development,
- Increase of the R&D capacity, stimulation of the cooperation between RDI institutions and enterprises, and increase of enterprises’ access to RDI
- Valorization of the IC&T potential and its application in the public (administration) and private sector (enterprises, citizens)
- Increased energy efficiency and sustainable development of the energy sector

Taking into account both the identified possibilities for improvement of the competitive position of Romanian companies and the areas eligible for the European Regional Development Funds support, the following Priority axes have been identified in the SOP IEC:

- Priority Axis 1: An innovative and eco-efficient productive system
- Priority Axis 2: Research, Technological Development and Innovation for competitiveness
- Priority Axis 3: ICT for private and public sectors
- Priority Axis 4: Increasing energy efficiency and security of supply, in the context of combating climate change
- Priority Axis 5: Technical Assistance

Figure 2: SOP Increase of Economic Competitiveness



Source: Extracted and adapted from the Romanian Government –*Framework Document –Sectorial Operational Programme "Increase of Economic Competitiveness"*, 2007

As it's mentioned by Droj(2011)a this analysis has as main goals to establish if the proposed investment is sustainable and has potential for generating further economic and financial growth for the company, in particular, and for the society in general terms. In the following chapter of the proposed paper we will analyze the main indicators used in a financial analysis part of a CBA, as requested by the management authorities of the EU, and the equivalent indicators proposed to be analyzed by the banking sector for the same project.

3. Financial Analysis in projects proposed to be financed under the SOP IEC Programme – Literature Review and Research methodology

The need for a standard Cost-Benefit Analysis(CBA) and Financial Analysis of the European Projects came from the fact that the elaboration, proposal, selection and management of major European Funded projects in the period 2007-2013 is supposed to involve a large number of actors and levels of decision-making. In order to avoid differences in the evaluation process of European funded investment projects at the level of the European Commission the "*Guide to COST-BENEFIT ANALYSIS of investment projects – Structural Funds, Cohesion Fund and Instrument for Pre-Accession*" was elaborated and releases to the used of interested stakeholders(European Commission, 2008).

As mentioned in the same document: "Investment decisions are at the core of any development strategy. Economic growth and welfare depends on productive capital, infrastructure, human capital, knowledge, total factor productivity and the quality of institutions. All of these development ingredients imply – to some extent – taking the hard decision to sink economic resources now, in the hope of future benefits, betting on the distant and uncertain future horizon. Every time an investment decision has to be taken, one form or another of weighting costs against benefits is involved, and some form of calculation over time is needed to compare the former with the latter when they accrue in different years. Gradually, a consensus has emerged about the basic principles of how to compare costs and benefits for investment appraisal" (European Commision, 2008).

The Financial Analysis Methodology is thoroughly described in this document since it is considered to be the key element for a realization of a proper CBA Analysis. As the European Commission(2008) methodology is mentioning the main goal of the Financial Analysis "is to use the project cash flow forecasts to calculate suitable net return indicators". In the Guide a particular emphasis is placed on two financial indicators: the Financial Net Present Value (FNPV) and the Financial Internal Rate of Return (FRR). These can be also sorted in terms of return on the investment cost, FNPV(C) and FRR(C), and also regarding the return on national capital, FNPV(K) and FRR(K).

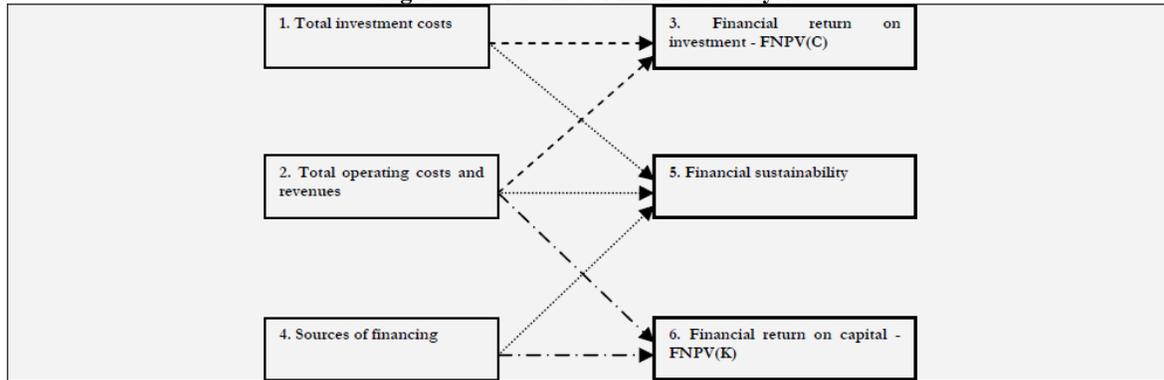
The cash inflows and outflows to be considered are described in detail below. The different definitions of net cash flows for the calculation of the project performance indicators used in this Guide

(as in the international practice for project appraisal) must not be confused with the ‘free cash flow’ under other accounting conventions, particularly those used in standard company accounts.

The methodology used for the determination of the financial return is the Discounted Cash Flow (DCF) approach. This implies some assumptions as are mentioned in the methodology:

- Only cash inflows and outflows are considered (non cash flows such as: depreciation, reserves and other accounting items which do not correspond to actual flows are disregarded);
- When determining the project cash flows it should be based on the incremental approach, i.e. on the basis of the differences in the costs and benefits between the scenario with the project (do-something alternative) and the counterfactual/initial scenario without the project considered in the option analysis(do-nothing scenario);
- After the aggregation of cash flows occurring during different years it is adopted an applied an appropriate financial discount rate in order to calculate the present value of the future cash flows.

Figure 3: Structure of financial analysis



Source: European Union(2008)

As seen in the Figure no. 3 the financial analysis should be carried out through subsequent, interlinked, accounts: 1. Total investment costs, 2. Total operating costs and revenues, 3. Sources of financing, 4. Financial sustainability, 5. Financial return on the national capital: FNPV(K) and FRR(K).

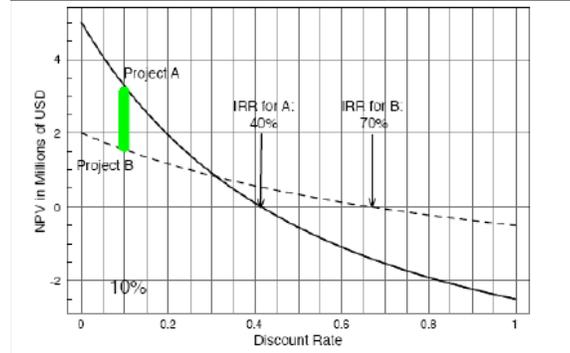
According to the methodology (European Commission, 2008) the Net Present Value of a project is the sum of the discounted net flows of a project. The NPV is a very concise performance indicator of an investment project: it represents the present amount of the net benefits flow generated by the investment expressed in one single value with the same unit of measurement used in the accounting tables.

$$(1) NPV = \sum_{t=0}^n a_t S_t = \frac{S_0}{(1+i)^0} + \frac{S_1}{(1+i)^1} + \dots + \frac{S_n}{(1+i)^n}$$

The Internal Rate of Return (FRR) is defined as the discount rate that zeroes out the net present value of flows of costs and benefits of an investment, that is to say the discount rate of the equation below(European Commission, 2008:212):

$$(2) NPV(i) = \sum [S_t / (1 + IRR^t)] = 0$$

The authors draw the conclusion that the Internal Rate of Return is an indicator of the relative efficiency of an investment, with known deficiencies(Damodaran, 2002:426, Citybank 302, Livingstone and Grossman 2002:622, Kaliski et all, 2007:301, Helfert, 2001:53), and it should be used with caution. The European Commission(2008:210) brings to attention the fact that: if the sign of the net benefits, benefits minus costs, changes in the different years of the project’s lifespan(for example - + - + -) there may be multiple FRRs for a single project. In these cases the FRR decision rule is impossible to implement. Another setback for using FRR can be the fact that FRR contains no useful information about the overall economic value of a project, fact recognized even by the European Commision(208:211) which encourages also the usage of the Net Present Value Method as presented below, to correct false results of the FRR method:

Figure 4: FRR and NPV of two mutually exclusive alternatives

Source: Ley (2007)

Since the goal of this study is to determine if a project which is accepted for financing by European Commission is also bankable in the following chapter we will set a case study using a project proposed by a Romanian production company which tries to access SOP IEC funding in 2011.

4. Case study – Financial Analysis of a European Funded Project and linkage to banking analysis

In the recent years one of the main problems in the implementation and operation stage of the European funded projects was created by the fact that most of the project had low bankability. Under these circumstances it was difficult for the beneficiaries to find financial sources for co-financing the investments or for ensuring the working capital needed for the implementation or for the operation stage. These difficulties to ensure co-financing created the situations in which beneficiaries of European Financing contracts for implementation of investment project were forced to cancel their financing contract since cannot complete the project. This situation was so serious that created new approaches on which project financing was tackled: the management authority of SOP IEC decided to request Banking Comfort Letters at the submission of the project and employed a mandatory application which included also financial cash-flows, for the financial sources provided by the banking sector, under the cost benefit analysis. In order to analyze the impact of these changes over a selected test company were analyzed both approaches the previous financial analysis approach and the current used CBA software.

As mentioned above we will select a TEST COMPANY, which is intending to access European funding to co-finance its infrastructure investments. Being a market leader in its field of activity the company desires to build a new production facility in Oradea Industrial Park with the goal of extending its activity on high quality plastic production. Also one of its goals is to eliminate imported raw materials and to increase efficiency and effectiveness of the production and commercial activity. Based on the data provided by the technical project and by the price offers on this company will be performed a financial analysis and later this will be compared with the bankability analysis, in order to ensure the future bankability of the project.

In the recent years one of the main problems in the implementation and operation stage of the European funded projects was created by the fact that most of the project had low bankability. Under these circumstances it was difficult for the beneficiaries to find financial sources for co-financing the investments or for ensuring the working capital needed for the implementation or for the operation stage. These difficulties to ensure co-financing created the situations in which beneficiaries of European Financing contracts for implementation of investment project were forced to cancel their financing contract since cannot complete the project.

The selected company has to fulfil several financial criteria established by the SOP IEC Programme. According to the Guide of SOP IEC Programme, in order to obtain financing for an investment project FNPV(K) is requested to be higher than 0 and FRR(K) to be between 0 and 9. For the mentioned project the mandatory discount rate was established to 5%. The analysis was realized both on

the implementation period of the project (2 years) and on the operation period of the investment realized within the project(7 years).

Figure 5: Generation of the Financial Net Present Value (FNPV/K)

Year	Investment Costs	Operation Costs	Total Costs	Total Revenues	Discounting factor	Discounted Costs	Discounted Revenues	Annually Net Present Value	Cummulated Net Present Value
-1	4.072.454	0	4.072.454	0	0,952381	3.878.528	0	-3.878.528	-3.878.528
-2	6.754.684	0	6.754.684	0	0,907029	6.126.698	0	-6.126.698	-10.005.225
1	0	1.156.702	1.156.702	2.167.000	0,863838	999.203	1.871.936	872.733	-9.132.492
2	0	1.169.202	1.169.202	2.224.500	0,822702	961.906	1.830.102	868.196	-8.264.296
3	0	1.241.702	1.241.702	2.397.000	0,783526	972.906	1.878.112	905.206	-7.359.090
4	0	1.416.221	1.416.221	2.454.500	0,746215	1.056.806	1.831.586	774.780	-6.584.310
5	0	1.450.921	1.450.921	2.585.500	0,710681	1.031.143	1.837.467	806.324	-5.777.986
6	0	1.686.521	1.686.521	2.724.500	0,676839	1.141.504	1.844.049	702.545	-5.075.441
7	-6.750.000	1.854.021	-4.895.979	2.871.500	0,644609	-3.155.992	1.850.995	5.006.986	-68.455
TOTAL	X	X	X	X	X	9.134.173	12.944.246	X	X

Source: Created by the author

As observed from the above table the project has FNPV higher than the imposed value of 0 starting from the first year of investment operation. The other important indicator in evaluation of the sustainability of the project is the annual turnover which continuously rises during the seven years of operation. Under these circumstances the project generates an FRR/K of 4,058% as can be seen in the table below:

Figure 6: Generation of the Financial Rate of Return (FRR/K)

Year	Investment Costs	Operation Costs	Total Costs	Total Revenues	Discounting factor	Discounted Costs	Discounted Revenues	Annually Net Present Value	Cummulated Net Present Value
-1	856.553	0	856.553	0	0,711339	609.299	0	-609.299	-609.299
0	1713.106	0	1.713.106	0	0,506003	866.836	0	-866.836	-1.476.136
1	0	1.181.702	1.181.702	2.167.000	0,359939	425.341	779.989	354.648	-1.121.488
2	0	1.199.202	1.199.202	2.224.500	0,256039	307.042	569.558	262.516	-858.972
3	0	1.281.702	1.281.702	2.397.000	0,182130	233.437	436.566	203.130	-655.843
4	0	1.456.221	1.456.221	2.454.500	0,129556	188.663	317.996	129.333	-526.509
5	0	1.490.921	1.490.921	2.585.500	0,092158	137.401	238.276	100.875	-425.635
6	0	1.726.521	1.726.521	2.724.500	0,065556	113.184	178.607	65.423	-360.211
7	-6.750.000	1.894.021	-4.855.979	2.871.500	0,046632	-226.446	133.905	360.351	140
TOTAL	X	X	X	X	X	2.158.721	2.342.385	X	X

FRR/K=4,058%

Source: Created by the author

As observed from the above table the proposed value for financing is 6,358,788 RON and the main financial indicators for the project are: financial internal rate of return for the investment 4.058% and FNPV is 5,006,986 Ron for the project. In these conditions, according the provisions of the ROP IEC guideline the project has been proposed for financing. But a question still remains: if the project is also bankable. An evolution to the bankability calculation has been brought by usage of the ACB-MININD software which became from 2011 compulsory to be used for the CBA analysis of these investment projects and which links for the first time elements of analysis used by the European Commission with elements of analysis used by the banking system.

Figure 7: Generation of the Discounted Cash Flow

Year	Operation Costs	Total Revenues	Discounting factor	Discounted Operation Costs	Discounted Revenues	Annually Discounted Cash Flow	Cummulated Discounted Cash Flow
0	0	0	0,952381	0	0	0	0
1	1.181.702	2.167.000	0,907029	1.071.839	1.965.533	893.694	893.694
2	1.199.202	2.224.500	0,863838	1.035.916	1.921.607	885.691	1.779.385
3	1.281.702	2.397.000	0,822702	1.054.460	1.972.018	917.558	2.696.943
4	1.456.221	2.454.500	0,783526	1.140.987	1.923.165	782.178	3.479.121
5	1.490.921	2.585.500	0,746215	1.112.548	1.929.340	816.792	4.295.912
6	1.726.521	2.724.500	0,710681	1.227.006	1.936.251	709.245	5.005.157
7	1.894.021	2.871.500	0,676839	1.281.948	1.943.544	661.596	5.666.754
TOTAL	X	X	X	7.924.704	13.591.458	X	X

Source: Created by the author

In the Figure no. 7 we can see the generation of the cash flow analysis for the above described investment project, as it was used prior to 2011 both in cost benefit analysis and in banking analysis, and in figure no. 8, figure no. 9 and figure no.10 we can see how the bankability of the project was included in the financial analysis since the introduction of the usage of ACB-MININD Analysis Software:

Figure 8: Presentation of the Financing sources (Currency: Thousands RON)

Assumptions regarding financing	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
<i>EU Funds for Financial AID</i>									
Eligible value of the project	4020.2	6691.4							
Non – eligible value of the project	0	0							
Required Financial Aid	2543.5	3813.0							
<i>Private finance</i>									
Own budget	0	0							
Loans	7605.0								
<i>Other financial flow</i>									
Loans payment	741	741	1415	1814	1814	1814	1628	1072	104
Interest payment	914	879	739	502	447	357	268	299	166
Income Tax	110.1	110.1	175.2	179.8	216.8	221.7	253.8	260.0	272.5
Royalties	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6

Source: Created by the author

As observed the financing sources for the implementation of the project come both from European funding and loans. The financial flow was generated and taken into consideration based on a simulation provided by a bank. After introducing the financial cash-flows the FRR is decreasing to 2,83% as it can be seen in the following Figure. The project is declared eligible for financing.

Figure 9: Financial Performance Indicators (Currency: Thousands RON)

Financial Performance Indicators	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	
<i>Incremental Income</i>										
Operating income with project	23917.6	23917.6	26084.6	26142.1	26314.6	26372.1	26503.1	26642.1	26789.1	
Operating income without project	23917.6	23917.6	23917.6	23917.6	23917.6	23917.6	23917.6	23917.6	23917.6	
Total Incremental Income	0	0	2167.0	2224.5	2397.0	2454.5	2585.5	2724.5	2871.5	
<i>Incremental expenses</i>										
Operating expenses with project	-14368.1	-14368.1	-15549.9	-15567.4	-15649.9	-16824.4	-15859.1	-16094.7	-16262.2	
Operating expenses without project	-14368.1	-14368.1	-14393.1	-14398.1	-14408.1	-14408.1	-14408.1	-14408.1	-14408.1	
Total operating expenses	0	0	-1156.8	-1169.3	-1241.8	-1416.3	-1451.0	1686.6	-1854.1	
Investment costs with project	-3972.5	-6469.0	37.8	-147.4	-299.0	-252.0	-350.8	-489.4	-523.7	
Investment costs without project	140.0	130.0	125.1	14.7	-75.1	-94.7	-106.1	-134.4	-162.4	
Total investment expenses	-4112.5	-6599.0	-87.3	-162.1	-223.9	-157.3	-244.7	-355.0	-361.3	
Residual value with project	0	0	0	0	0	0	0	0	6750	
Residual value without project	0	0	0	0	0	0	0	0	0	
Total residual value	0	0	0	0	0	0	0	0	6750	
Cash Flow	-4112.5	-6599.0	922.9	893.1	931.3	880.9	889.8	682.9	7406.1	
Financial Performance Indicators	2.83%									
VANF/C	-1114.5	THE PROJECT CAN BE FINANCED BY EUROPEAN FUNDING!								
VAN benefits	12944.2									
VAN financial costs	-14058.8									
B/C	0.9									

Source: Created by the author

Figure 10: Financial sustainability of the project (Currency: Thousands RON)

Financial Sustainability of the project	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Positive Cash flow									
Financial resource of project	10148.5	3813	0	0	0	0	0	0	0
Financial Income of project	23917.6	23917.6	26084.6	26142.1	26314.6	26372.1	26503.1	26642.1	26789.1
Total Incremental Income	34066.1	27730.6	26084.6	26142.1	26314.6	26372.1	26503.1	26642.1	26789.1
Negative cash flow									
Operating expenses with project	-14368.1	-14368.1	-15549.9	-15567.4	-15649.9	-16824.4	-15859.1	-16094.7	-16262.2
Investment costs with project	-3972.5	-6469.0	37.8	-147.4	-299.0	-252.0	-350.8	-489.4	-523.7
Loans payment	741	741	1415	1814	1814	1814	1628	1072	104
Interest payment	914	879	739	502	447	357	268	299	166
Income Tax	110.1	110.1	175.2	179.8	216.8	221.7	253.8	260.0	272.5
Royalties	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6
Total negative cash flow	-20134.3	-22595.8	-17870.8	-18239.2	-18455.3	-18497.7	-18388.3	-18143.7	-17357.0
Other cash flows	-73.7	-532.0	1199	1264	1348	1370.3	1400.9	1436.6	1489.6
Total cash flow	13858.1	4602.8	9412.8	9166.9	9207.3	9244.7	9515.7	9935	10921.7
Cumulative Cash Flow	13858.1	18460.9	27873.7	37040.6	46247.9	55492.6	65008.3	74943.3	85865.0
Conclusion of the Cumulative Cash Flow Analysis	THE PROJECT IS SUSTAINABLE!								

Source: Created by the author

In figure 10 the Financial Sustainability of the project is analyzed by using also the information provided by the credit analysis from the banking system. As observed all elements of financial sustainability were considered: since in the beginning only operational expenses were presented in this stage were included also other payments and was analyzed the real capacity of the company to ensure financing resources for loans payments, interest payments, income tax or royalties. Afterwards the project is declared sustainable both by the management authorities of the programme and by the banking system.

5. Conclusions

In the recent years one of the main problems in the implementation and operation stage of the European funded projects was created by the fact that most of the projects, corresponded to the criteria imposed by the European Structural Funds Management Authorities but were considered to have a low bankability. Under these circumstances it was difficult for the beneficiaries to find financial sources for co-financing the investments or for ensuring the working capital needed for the implementation or for the operation stage. These difficulties to ensure co-financing created the situations in which beneficiaries of European Financing contracts for implementation of investment project were forced to cancel their financing contract since cannot complete the project.

The financial analysis of the European funded projects constitute the basis of the cost benefit analysis requested by the regulation and methodology of the European Community and also the basis for calculation of sustainability and bankability of the project. Since changes were made and an evolution to the bankability calculation has been brought by usage of the ACB-MININD software which became from 2011 compulsory to be used for the CBA analysis of these investment projects and which links for the first time elements of analysis used by the European Commission with elements of analysis used by the banking system.

As revealed by the analysis presented in the previous chapter this approach should be further extended and common solutions accepted by all stakeholders: structural funds management authorities, banking sector and private/public beneficiaries should be created in order to ensure both the financial sustainability, according to EU regulations and bankability criteria which is requested by the banking sector in order to ensure co-financing of the projects.

6. Acknowledgement

“This work was supported by the project “Post-Doctoral Studies in Economics: training program for elite researchers- SPODE” co-funded from European Social Found through the Development of Human Resource Operational Programme 2007-2013, contract no. POSTDRU/89/1.5/S/61755”

7. References

- Citybank. (1994) *Basics of Corporate Finance*, Edited by Professional Development Center of Latin America Global Finance and the Citibank Asia Pacific Banking Institute, United States
- Damodaran, A. (2002) *Investment valuation 2nd Ed. – Tools and techniques for determining the value of any asset*, Edited by John Wiley & Sons, New York, United States, 2002
- Droj L.(2011)a *Determination of Residual Value within the Cost Benefit Analysis for the Projects Financed by the European Union*, published in *Analele Universității din Oradea, seria Stiințe Economice*, Tom XX 2011, 2nd issue December 2011, Oradea, Romania
- Droj, L., Droj, G. (2011)b - *European Funding – Reduction of Economic Disparities or the Rich Get Richer?*, The 18th International Economic Conference – IECS 2011, “Crises After the Crisis. Inquiries From a National, European and Global Perspective”, Sibiu 19-20 Mai 2011, Published in *Proceedings of the 18th International Economic Conference – pag. 201-210*, Sibiu, Romania
- Droj, L. (2010)a *The Involvement of the Banking Sector in Co-Financing European Funded Projects Proposed by Romanian Private Companies* - International Workshop “Advanced Research And Trends In Accounting, Audit And Finance”, ICMEA 2010, Alba Iulia, România, published in *Proceedings of the International Workshop “Advanced Research And Trends In Accounting, Audit And Finance”*, Alba Iulia, Romania
- Droj, L., (2010)b *Absorption Capacity of ERDF Funding between Figures and Facts in North Western Romania*, The 15th International Business Information Management Association Conference, Cairo, Egypt, 6-7 November 2010, publicată în *Proceedings of the 15th International Business Information Management Association*, editor: Khalid S. Soliman, ISBN 978-0-9821489-4-5, pag. 1189- 1197, www.ibima.org
- Droj L. (2011) *Determination of Residual Value within the Cost Benefit Analysis for the Projects Financed by the European Union*, published in *Analele Universității din Oradea, seria Stiințe Economice*, Tom XX 2011, 2nd issue December 2011, Oradea, Romania.
- Economist Intelligence Unit, (2007) *Plugging in EU Funds and Technology in the New Member States*, The Economist, London, UK.
- European Commission (2007) *Cohesion Policy 2007-13 Commentaries and official texts.* , European Commission, Brussels, Belgium
- European Commission (2008) *Guide To Cost-Benefit Analysis of Investment Projects*, European Commission, Brussels, Belgium
- European Commision (2009) *European Cohesion Policy in Romania*. Available at http://ec.europa.eu/regional_policy/sources/docgener/informat/country2009/ro_en.pdf
- Guvernul României (2011) – Ministerul Întreprinderilor Mici și Mijlocii, “*Ghidul Solicitantului POSCCE Axa I Domeniul 1.1 – Sprijin Financiar cu valoarea cuprinsa între 1.065.000 – 6.375.000 lei acordat pentru investiții în IMM*”, București, 2011
- Helfert, E.(2001) *Financial Analysis: Tools And Techniques - A Guide For Managers*, Edited by The McGraw Hill Companies, United States 2001
- Kaliski et all, (2007) *Encyclopedia of Business and Finance - Second Edition*, Edited by Macmillan Reference USA., United States, 2007
- Ley, E. (2007) *On the Improper use of the Internal Rate of Return in Cost-Benefit Analysis*, World Bank Institute, Washington D.C., 2007
- Livingston, J. L. and Grossman, T. (2002) *The portable MBA in finance and accounting*, Edited by John Wiley & Sons, New York, United States, 2002
- Romanian Government - Ministry of Economy and Finance, (2007) *Framework Document - Sectorial Operational Programme “Increase of Economic Competitiveness”*, București, 2007

THE TOLERANCE AND OPERATIONAL RISK APPETITE IN BANKING

PETRIA Nicolae

*Ph. D. Associate profesor, Faculty of Economics, Lucian Blaga University of Sibiu,
Sibiu, Romania, nic_petria@yahoo.co.uk*

TRENCA Ioan

*Ph. D. Professor, Faculty of Economics and Business Administration, Babeş-Bolyai University,
Cluj-Napoca, Romania, ioan.trenca@econ.ubb.ro*

MUTU Simona

*Ph. D. Student, Faculty of Economics and Business Administration, Babes-Bolyai University,
Cluj Napoca, Romania, simona.mutu@ubbcluj.ro*

Abstract: *Operational risk appetite is an area that attracts differing views among practitioners. In theory, accepting any type of risk may carry some aspect of reward but it is important for operational risk practitioners to be aware of the view that this risk type differs from, for example, credit risk and market risk. Operational risks may be inherent in operational activities but are rarely intentionally sought and have no material upside in terms of return/income generation. There are, however, cost/benefit decisions involved in defining an appropriate balance between accepting potential losses on the one hand and incurring costs of mitigation on the other. In simple terms, the expression of the appetite towards the operational risk for a bank could be achieved by establishing, for each type of risk, what is acceptable, what is unacceptable and the range between these parameters is what is tolerable. In this respect, from the presented aspects in this work, we intended to create a "best practices" set to guide the concrete activities of implementing an efficient and effective management of operational risk in accordance to the risk profile adopted by the banking institution.*

Key words: risk appetite, operational risk, threshold

JEL classification: G 32, D 81

1. The concept of tolerance and risk appetite

In simple terms, the expression of the appetite towards the operational risk for a bank could be achieved by establishing, for each type of risk, what is acceptable, what is unacceptable and the range between these parameters is what is *tolerable*. These concepts are the basis of determining the risk profile of the credit institution and of subsequent monitoring.

In order to monitor the status of operational risk appetite, it's a common and simple practice in global banking to utilize a graphic representation based upon associating suggestive colors for each level. A generally accepted representation for such an approach could be the one below:

Status/ Color	Associated risk significance	Necessary measures
Green	<u>Acceptable</u>	No measures are necessary but the monitoring continues.
Yellow	Tolerable, but there are necessary actions to prevent movement towards <u>Unacceptable</u> state.	Investigation (to check and understand the underlying causes) and establishing the methods for reducing/avoiding risk in a well determined period of time
Red	<u>Unacceptable</u> . Requires urgent attention.	Investigate and implement reducing/avoiding risk measures in a short period of time

This approach can be applied to all the components that address the operational risk (including here the risk self-assessment, the loss reports due to risk materialization or the analysis of test scenarios), it ensures a clear indication of the proportionality of measures taken with the perceived level of associated risks.

From the business perspective there is a series of benefits arising from specific implementation approach to risk appetite:

The possibility granted by the Board of Directors to exercise adequate supervision and corporate governance through defining the nature and level of risk they consider acceptable (and unacceptable) and also to set the limits for business and behavioral activities;

Providing a means of expressing the attitude towards risk to senior management, which can be communicated throughout the organization as part of promoting a culture of risk awareness (e.g., clarify the relationship between risk and profitable business);

Establishing a framework for adopting business decisions and risk management (which risks can be accepted, which risks can be mitigated and how much) to ensure an appropriate balance between risk taking and risk aversion;

Improving risk management resource allocation by focusing on higher priority issues (e.g. in areas where appetite thresholds are threatened);

Providing a consolidated view of risk costs so that the costs do not exceed the benefits of mitigating risks;

Aligning strategic objectives and operational activities by optimizing the balance between development/profit increase of business environment and of the risks inherently related to achieving these objectives;

Encouraging conscious and effective practices of risk management, e.g. prioritizing risk issues before escalating and adopting measures;

All these can help to improve performance and, as a consequence, increase value for stakeholders.

2. The process of establishing the risk appetite

There are several considerations involved in addressing operational risk appetite that can be expressed in a variety of ways such as key risk indicators (KRI), self-assessment of risk and implemented controls, and associated losses also respecting the general principles associated with the quality levels of the processes.

Top-down and bottom-up

In the context of consistent corporate governance, it is clear that determining the risk appetite should be the privilege of the Board of Directors and its commitment to respect it should be total.

Over the time there were expressed conflicting views on how should be established the appetite for operational risk: using a top-down approach or bottom-up one. A number of studies of operational risk practitioners (e.g. Marsh & AIRMIC 2009) strongly support a hybrid approach.

However it seems more logical and easier to understand by the bank structure, if one starts with a cascade approach from top to bottom, from the Board of Directors level (which has a wide institutional perspective), in order to determine the cultural context for the organization and provide a basis for monitoring an governance and to facilitate alignment with the business strategy. This is often expressed in qualitative terms but may also include quantitative levels related to the relationship between expected/unexpected losses and profit before tax (e.g. operational risk losses may not exceed 2% of gross profit).

Below are presented some factors that encourage the complementary *bottom-up* approach, in which limits are set at lower levels of organization in accordance with operational activities:

- Insuring the covering of the risks and of relevant factors in the specific operational processes;
- Facilitating the establishment of proportional thresholds of tolerance;
- Promoting the involvement of management at all levels;
- Compliance with performance objectives, also with establishing staff benefits (which itself is recognized as a means of operational risk management).
- Qualitative and Quantitative

Qualitative expressions of operational risk appetite (without any reference to quantification) may enhance the relationship between risk and business management. This is often considered the best way to describe attitudes and behaviors of the organization as a whole –finally integrated in what is called “*risk culture*”. This could be achieved through a series of statements/principles, for example:

Recognizing that some risks, though undesirable, are inevitable (e.g. terrorism, natural disasters, consequences of economic recession). It is therefore accepted that a certain level of these risks should be tolerated to avoid suffocation or limiting business options;

Risk acceptance is logical if the reduction/avoidance cost exceeds expected loss, provided that the resulting risk is too high and not endanger the institution itself;

Risks can be accepted if the estimated losses are at an expected level of tolerance;

There are some unacceptable behaviors such as: willful violation of law, of regulatory requirements, of the institution policies, willfully damage of institution assets or disruption of customer services etc.;

Operating in some countries, selling specific products etc., may be considered unacceptable risks;

It is useful to use qualitative descriptions in order to emphasize events that may lead to unacceptable damage to reputation or loss of stakeholder confidence.

Quantitative expressions of operational risk appetite implies raw data, usually having as a source the management processes data and may consist of any combination of KPI's (Key Performance Indicators), KRI's (Key Risk Indicators) or KCI's (Key Control Indicators).

The measures are usually placed in correspondence with the thresholds values, in this way being immediately obvious when a violation has occurred or when it is imminent. Trying establishing zero thresholds may seem impossible, but they can have a strengthening cultural effect on the message that is not normal to accept avoidable losses without appropriate investigations and decisions.

Examples of quantitative measures could be:

The economic or regulatory capital value allocated to operational risk, this is calculated in accordance with the approach chosen for operational risk management, as they are described and the methods presented in the NBR/CNVM 24/2006 Regulation;

Delegating limits of competence over which the employees need to escalate the approval application;

Levels of performance, i.e. no more than n% chances that any critical system should be down for more than one day a year;

Each component of the framework approach of operational risk:

Losses – based on budget, total annual amount of business line/loss type and/or sensitivity, such as a bad trend of 5% is acceptable, 10% tolerable and 15% unacceptable. Note that the minimum reporting threshold implies single loss limits, but should also be aggregate limits as with an annual budget. The goal is to cover both large type/low value situations and also low volume/high value types of events. Reporting and escalating thresholds involves clear risk appetite expression, for example: below threshold =acceptable, above this level=tolerable or unacceptable;

Risk assessment/controls: by setting limits based on a matrix of likelihood and impact in order to distinguish residual risk levels – acceptable/tolerable/unacceptable;

Key risk indicators: in this case the thresholds will be established in relevant metric units such as numbers, financial value, percentage, variations etc.

By addressing all the aspects of the framework (including the future and historical perspective), a bank may set boundaries on operational risk appetite in both long and short term. By aggregating all measured aspects one may obtain a global image of past/present/future performances in terms of operational risk appetite. Aggregation can be done using different methods – simple or weighted average method, contamination method etc.

Absolute and relative values

The distinction between these notions, in our case, is that absolute values are fixed and the relative ones are variable (they vary depending on the benchmark chosen). For example:

Values/qualitative statements could include zero tolerance for breaking the law (which is an absolute value) but a certain tolerance for financial crime, which is not expressed in value but compared to a target group (a relative value). Further implications of such an approach are that the bank does not want to suffer greater losses than its competitors (which could cause a negative reputational impact on the respective process), but on the other hand does not want to encourage operational inefficiency (eventually having a negative impact on customer service level) because of over-control;

Quantitative measurements could include monetary values, volume and time values, etc. (as absolute values), or losses as a percentage of [gross profit (before tax)]/capital, the percentage of complaints over active clients, the percentage of overdue projects against the plan (as relative values), etc.

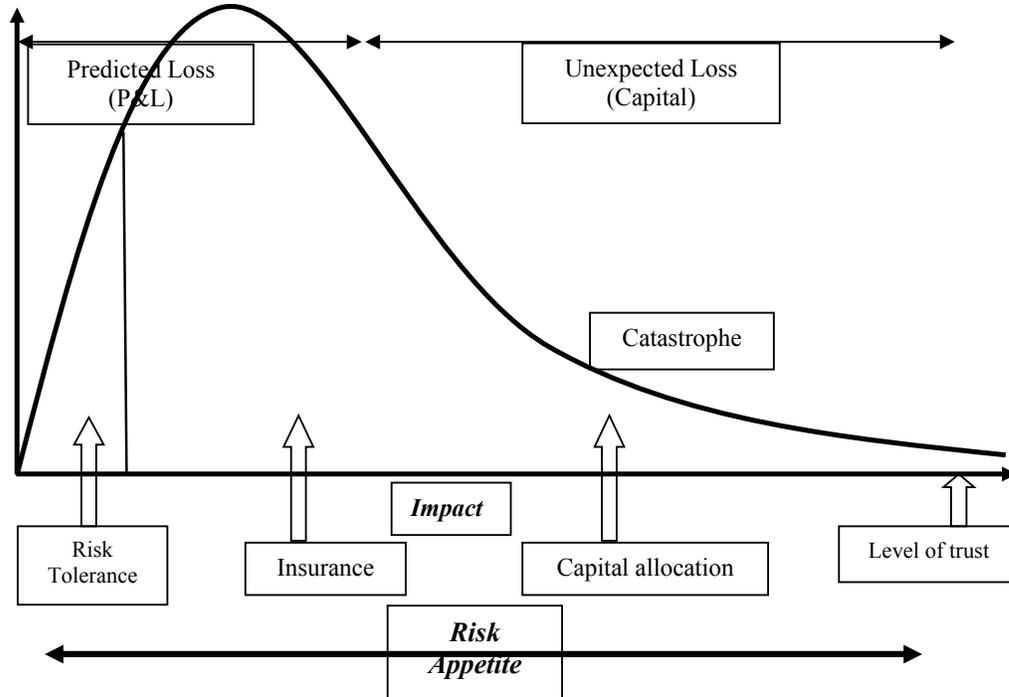
Establishing thresholds

A key-element of the process is to establish the level of agreed thresholds. They should provide specific definitions for each expression of appetite, what is “acceptable” becoming “tolerable” or “unacceptable”. For qualitative expressions of appetite this may be simply a matter of explicit expression of what is acceptable or not.

There are several ways of describing a distribution curve for operational risk. The following example has an illustrative purpose. Thresholds could be set to any point on the risk curve, from high probability and reduced impact to low probability and high impact:

- The predicted losses that can be accepted under normal trading conditions (they fit within the existing budget or in the Profit & Loss estimate), and in conclusion that can be tolerated as part of the declared risk appetite;
- The value of predicted losses (and up to a level of unexpected losses), where the risk is insurable and the amount not covered (either before the coverage is provided or the value exceeds the maximum amount covered), is tolerated in the risk appetite;

The amount of allocated capital is a buffer against severe unexpected losses, unsustainable under normal conditions, in terms of resources available from the P&L account.



Note: establishing the level of trust also represents and expression of risk appetite.

In the case of quantitative data may be appropriate for tolerance to be expressed as a range of values. This may include both positive and negative variations. For example, if one wishes to monitor the number of employees, a significant variation above or below the optimum level set could be indicative of some negative consequences. Too many employees may signal inefficiency; losses and unnecessarily high costs while too little employees could lead to failures in enforcing procedures and controls or low standards of customer service (see table below). Warning in both directions can be helpful both in terms of business and of the risk.

Optimum level of employees	Tolerable deviation	Unacceptable deviation	Present Level							
			Month	Jan	Feb	Mar	Apr	May	Jun	Jul
2830	+/- 5%	+/-10%		2690(G)	2620(Y)	2960(G)	2910(G)	3080(Y)	3118(R)	Etc.

Identifying “optimum” threshold is ultimately a problem for that business line; it must establish this level based on practical experience and predicted future evolution. But the decision can be influenced by consideration of any relevant information, historical or predictive, internal or external (e.g. benchmarking against comparable banking institutions or banking standards in general).

Even so, if the procedure for review/approval thresholds is flexible enough, the initial values may be finely adjusted according to future practical experiences. Thresholds should be sensitive enough to

provide “early warning” of potential violations of risk appetite, but not so hypersensitive to trigger unnecessary alarm systems.

As an example for how historical data could be used as a starting point, a review of records in the last 12 months (subject to seasonal fluctuations) could be included in the tolerance thresholds, as follows:

- Average of the recorded data could be adopted as the threshold for transition from “green” to “yellow” on the grounds that values above average (above normal) indicate levels that should be investigated;
- The most unfavorable position could represent the crossing threshold from “yellow” to “red” indicating that there is no appetite in the future for positions worse than the most unfavorable situation.

In the situation in which the thresholds are set *bottom-up*, on prudential considerations, should be assured and adequate level of management through revision and approval by higher levels of authority (e.g. a risk administration committee). This can lead to a series of benefits:

- Advise management about the levels of risk proposed by the subordinates and accept them, creating an opportunity to discuss this thresholds;
- Analyzing from a broader perspective of individual or departmental tolerance levels, putting them in accordance to the lines of business;
- Ensuring that tolerance levels that are drawn *bottom-up* are in accordance or within the boundaries of those elaborated *top-down*.

3. Implementation and practical application

Once defined and documented, operational risk appetite parameters, mentioned before, it proceeds to communicate them to the decision centers (departmental, on business lines, etc.) and then proceed to practical implementation.

Monitoring

If operational information is not always compared with the set boundaries of risk appetite then we have no practical use of them. A key aspect of monitoring is the “early warning” of problems and, in order to be an effective management tool, monitoring is more than a mechanical procedure, it is also requiring interpretation and arbitration.

There are two distinct stages involved in monitoring procedures:

- Establish the ones responsible to carry out the specifying reporting and frequency agreed to these reports. From the beginning it is important to take all reasonable steps in order to ensure the integrity, accuracy and timeliness of data;
- The second step is crucial – the conversion of data into information by adding context and interpretation (for example, how data are included in performance indicators of business, if the data suggest the appearance of a low or increased risk). This includes identifying and investigating adverse variations and trends and, especially, analyzes their underlying causes. In these analyzes should be regarded some considerations such as:
 - If “**yellow**” appellants indicate a static position or aggravation of the situation;
 - If a group of “**yellow**” positions signify, in general a “**red**”;
 - If “**green**” appellants may suggest that thresholds are not sufficiently sensitive and should be reviewed.

Obviously, monitoring activities and establishing the positions against the parameters of operational risk appetite are more complex, but the main benefit should be the occurrence of “early warnings”. Often, monitor compliance only provides ensuring that there will be an exchange of views, even if its value should not be underestimated.

Aggregation and reporting

One of the challenges resulting from the aggregation of information (through their synthesis as they are reported to the higher levels of management) is the potential distortion of reality. A “**red**” occurred in a small business entity may be of minor importance or even unimportant to the Board of Directors and appears the danger that the meaning and value of “**unacceptable**” to be diluted. On the other hand it would be completely inappropriate for the respective business entity to simply adopt the tolerance threshold of the upper levels –because then it will always be “**green**” and will not require any attention.

One solution is to build a conversion table (probably based on business criteria scale), so that a “**red**” on a business entity will always remain just local, but through successive layers of management

reporting can become “**yellow**” or even “**green**” to meet more precisely a sense of proportion in the new context in which it is interpreted. For example:

<i>Threshold/Risk appetite</i>	1	2	3	4	5	6	7	8
Entity	R	Y	Y	R	Y	R	R	Y
	A Entity = 80% of X Department		B Entity= 20% of X Department		C Entity = 20% of Y Department		D Entity = 80% of Y Department	
Department	R	Y	G	Y	G	Y	R	Y
	X Department = 80% of Business Line				Y Department = 20% Business line			
Business Line	R	Y	G	Y	G	G	Y	G

From the business line perspective, the most significant risk is “risk 1”, occurred in the most consistent business of the biggest department. But, at business entity level, all serious risks (**red**) – the most significant from the local level – will receive an appropriate level of attention.

Another important point regarding the reporting of information related to operational risk appetite, is the need to have a clearly defined objective which may be one of the following:

- Just for information, as a reference source in case of future need;
- With management purpose in order to allow and demonstrate supervisory activities;
- To ensure the existence of an approval in certain situations;
- To obtain a decision or the implementation of required action.

It is important to ensure that reporting information related to operational risk appetite should not be seen as a vehicle for presenting too optimistic interpretation of positions and trends. The real value is on providing the “early warnings” that may encourage the timely management intervention and take action to avoid further problems.

Management and decisions adopting

The finality of the operational risk appetite’s processes should be a logical and significant conclusion –reaching the point where business performance and risk management are effective.

“**Yellow**” and “**red**” should lead to adopting certain actions and the final decision will represent one of the following:

- Acceptance of exceeding limits, after weighing all the evidence, for example, one can reach the conclusion that a particular violation is in fact an exception. In other cases it may be appropriate to review and re-calibrate previous levels of tolerance if it feels they are sufficiently sensitive. It is recommended that the approaches chosen to be documented, recorded and regularly reviewed;
- Taking measures to mitigate/avoid risks or to prevent recurrence; it is probably the most appropriate response to a breach of risk appetite levels and will require approval for the application of additional or alternative control measures;
- Some interim management actions –for example, making a large or intense monitoring, further analysis to identify the cause or a cost/benefit analysis for mitigation options.

In any of the above situations will be met the expectations of risk management and business regulation. Senior management will be aware, informed and involved in the decision making process.

4. Conclusions

This work has not proposed nor has addressed all aspects of operational risk governance. It hasn’t been approached, for example, the addressing of risks associated to outsourced activities and neither the business continuity plan nor the stress test scenarios. Though, there have been addressed some of the most important issues which through their particularity present certain difficulties in implementation. In this respect, from the presented aspects in this work, we intended to create a “best practices” set to guide the concrete activities of implementing an efficient and effective management of operational risk in accordance to the risk profile adopted by the banking institution.

A good governance of operational risk, from the Board of Directors *top-down* to the simple employees’ level, in which each person knows and respects the role and responsibilities in managing operational risk, is essential for successful management and thus for the success of the banking institution. In conclusion, good governance makes it possible to materialize the main benefit of risk management, namely that effective risk management and an appropriate reporting system lead to consciously adopting the right actions.

The main activities of operational risk management addressed in this work bring effective benefits upon banks' business. For example, the analysis of risk exposure to operational risks and events results in diminishing the loss; the effective evaluation of controls and planning scenarios lead to resource optimization and cost reduction. An efficient human resource management, an essential part of risk management, leads to the improvement of risk management and to increase the level of staff retention.

Intelligent operational risk management also helps to induce the organizational culture of continuous improvement and business optimization.

All these are possible only if the activities take place in a consistent and coherent framework and within a risk culture that is spread amongst the entire organization and involves every employee.

5. Acknowledgement

“This work was supported by the project “Post-Doctoral Studies in Economics: training program for elite researchers- SPODE” co-funded from European Social Found through the Development of Human Resource Operational Programme 2007-2013, contract no. POSTDRU/89/1.5/S/61755”

6. References

- NBR Regulation no.18/09.17.2009 regarding the framework for administration of credit institutions, the internal capital adequacy assessment of the risks and outsourcing their activities.
- Operational Risk – Supervisors Recommendation to Address Advanced Measures – *Basel Committee on Bank Supervision, (2011)*
- Operational Risk Governance – Consistent Practice Guide to Address Operational Risk – *Institute of Operational Risk*
- Principles of Improving Corporate Governance – *Bank for International Settlements (2010)*
- Sound Practices for the Management and Supervision of Operational Risk – *Basel Committee on Bank Supervision*

ANALYSIS OF FACTORS INFLUENCING THE LEVEL AND DYNAMICS OF NET PROFITS**UNGUREANU Sebastian***Ph. D. Student, Doctoral School of Economics, Alexandru Ioan Cuza University, Iași, Romania,
sebastian_ungureanu2000@yahoo.com***TĂNASE Florentin Emil***Ph. D. Student, Doctoral School of Economics, Alexandru Ioan Cuza University, Iași, Romania,
tanasa.florentinemil@yahoo.com*

Abstract: *The study aims to determine factors of influence acting on the company's net profit by using quantitative methods of data analysis that will lead to results of research to highlight the impact on current practice and future development directions. Research identifies first links between the statistical variables, respectively factorial axes and on the other hand the determination of main factors of influence acting on the net profit. Thus, factorial axes were identified, which explained the large differences of statistical units and, in the second part of the study has determined the main factors of influence acting on the net profit, the indicator relevant for establishing the financial performance and direction of company development strategy.*

Key words: econometric model, principal component analysis, multiple linear regression.

JEL classification: C 50, M 40, M 41

1. Introduction

In the market economy have held frequent changes in the number and structure of economic entities. Being in competition, it is a question of comparing them, especially when it comes to external growth operations, the participation of a new partner or shareholder equity, fixing the insurance or guarantees for credits requested, unachievable goals in the absence of annual financial statements giving a true and complete overview of the global entity and transactions involving, based on pertinent and relevant accounting information.

Economic modeling is a process mediated by the knowledge of reality with a special tool features: model. The real system subject to study is replaced by his model, which is a simplified representation of the object under study.

An econometric model is usually a lot of numerical relationships which allows simplified representation of the economic process subject to study (sometimes even the whole economy). Current models often involves more than ten relations (equations). The validity of a model is tested by confronting the results with statistical observations. To study an economic phenomenon is attempted representation of the behavior variables. This economic variable depends in turn on other variables that are linked by mathematical relationships.

Getting information is not limited to recording data on phenomena and processes subject knowledge, but includes all operations of systematization, processing, analysis and interpretation of information.

During the current problems of modern management involving the use of methods and models, mostly statistical and mathematical (econometric), through which to obtain relevant indicators, for establishing financial performance and orientation the company's development strategy.

2. Research methodology

The main objective of this study was so designed that it can be captured successively and in detail, the main issues aimed at theoretical and practical perspectives on the existence of financial and accounting performance by identifying the main components of financial, with which can be a true enterprise performance and information through use of these annual financial statements and on the other hand, the study aims to determine factors of influence acting on the company's net profit by using quantitative methods of data analysis that will lead to results of research to highlight the impact on current practices and directions of development.

Thus, based on the above we propose first to identify links, associations between statistical variables, namely the identification of factorial axes, which explains the large differences of statistical units, and on the other hand the main determining factors of influence acting on net profit.

For this process we followed several steps: building an econometric model as estimated equation of multiple regression model of the net profit, estimating model parameters, testing parameters and the proposed model, testing model hypothesis.

Presentation of the problem: This study aims to determine factors of influence acting on net profit of S.C. Aerostar S.A. Bacău. Factors that influence the environment of a company can be classified as follows:

- economic factors;
- political factors;
- social factors;
- geographic factors, etc..

This study aims to analyze the main economic factors that can influence the activity of SC Aerostar S.A. Bacău. Thus, we did an analysis for the period 1980 - 2009, of the main financial indicators that affect the company's net profit. We considered significant, in the context studied, the following indicators:

- Turnover (X1);
- Cash flow (X2);
- Production year (X3);
- Annual Investment Development (X4);
- Labour productivity (X5);
- Share wages fund turnover (X6).

3. A principal component analysis - Analysis of correlations between variables

To determine the statistical relationship between variables with the A.C.P. method, we will make a graphical representation of points - variables and values of correlation coefficients and respective factorial axes.

A.C.P. - highlights the "p" straight lines ranked, called factorial axes or principal components, that will design variables, depending on the degree of differentiation between them. These axes, which are linear combinations of original variables have the advantage of being connected with each other, unlike the variables analyzed.

Making A.C.P. is to determine the eigenvectors and eigenvalues of the correlation matrix associated to the set of analyzed variables.

All these calculations are made using specialized software to facilitate analysis of data tables of important dimensions.

Thus, we will analyze the results obtained on statistical variables calculated using SPSS.

Table 1: Correlation Matrix(a)

		X ₁ (million)	X ₂ (million)	X ₃ (million)	X ₄ (million)	X ₅	X ₆ (%)
Correlation	X ₁ (million)	1,000	,948	,994	-,674	-,159	-,986
	X ₂ (million)	,948	1,000	,957	-,671	-,241	-,934
	X ₃ (million)	,994	,957	1,000	-,684	-,229	-,973
	X ₄ (million)	-,674	-,671	-,684	1,000	,514	,686
	X ₅	-,159	-,241	-,229	,514	1,000	,132
	X ₆ (%)	-,986	-,934	-,973	,686	,132	1,000
Sig.	X ₁ (million)		,000	,000	,000	,201	,000
	X ₂ (million)	,000		,000	,000	,099	,000
	X ₃ (million)	,000	,000		,000	,112	,000
	X ₄ (million)	,000	,000	,000		,002	,000
	X ₅	,201	,099	,112	,002		,243
	X ₆ (%)	,000	,000	,000	,000	,243	

The analysis of indicators in Table 1 (Correlation Matrix) assess the possibility of applying the analysis of principal components because of the high values of these coefficients (higher than 0.5, less than -0.5) except labour productivity whose correlation coefficient is 0,024 and Sig is 0,449 that is higher than 0,05.

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,809
Bartlett's Test of Sphericity	Approx. Chi-Square	415,017
	df	21
	Sig.	,000

In order to test the hypothesis of independence of statistical variables we calculated values and test statistics using SPSS statistical KMO. A value of Sig. <0.05, associated test statistics calculated values λ^2 ($\chi^2_{\text{calculat}} = 415,017$) and KMO statistic (0,809), means that there are statistical links between the variables mentioned.

Table 3: Total Variance Explained

Component	Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	5,397	77,104	77,104
2	1,179	16,842	93,946

Note: Extraction Method: Principal Component Analysis.

The values of matrix correlations are presented in Table. 3 (Total Variance Explained). The highest value ($\chi_1 = 5397$) corresponds to the first factorial axis and the value $\chi_2 = 1.179$ corresponds to the second factorial axis.

Thus, it can be concluded that the most representative variables are those of the first factorial axis (variance explained by the first factorial axis is 77.10%, and the variance explained by the second factorial axis is 16, 90%).

Table 4: Component Matrix(a)

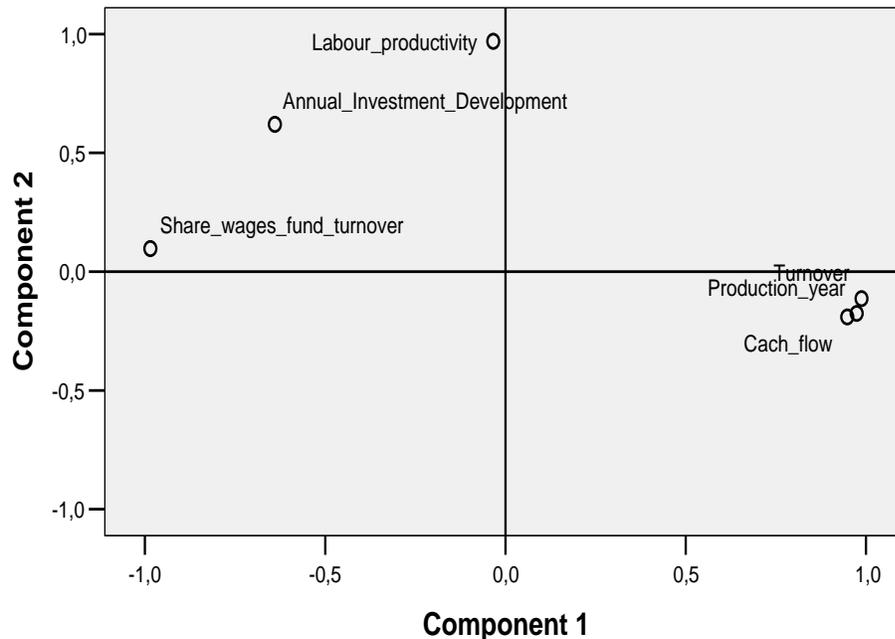
	Component	
	1	2
Turnover	,259	,101
Cach_flow	,232	,028
Production_year	,242	,045
Labour_productivity	,183	,814
Annual_Investment_Development	-,059	,397
Share_wages_fund_turnover	-,261	-,114

Note: Extraction Method: Principal Component , Analysis a 2 components extracted

The variables coordinates of the two factorial axes are presented in Table. 4 (Component Matrix (a)). The indicators coordinates of the first factorial axis **Turnover, Cash Flow, Production year** shows that there are significant links between these variables (direct links) and the indicators coordinates of the second factorial axis **Annual Investment Development, Labor productivity, The wage share turnover (%)** shows that there is an insignificant link between indicators of the first factorial axis and indicators of the second factorial axis (inverse link). This is evidenced in Fig. 1.

Figure 1: Variables representing the first two factorial

Analysis of correlations between variables



axes

4. Multiple linear regression analysis

4.1. Model design and definition of statistical data

In order to analyze the factors that influence the net profit in the period 1980 - 2009, we used a multiple linear regression based on data extracted from the BVB.RO. The analysis show that ACP development indicators annual investment, labor productivity, the wage share in turnover (%) are insignificant for the value of net profit for the period 1980 to 2009. This model has the following form:

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$, where:

- Y: annual net profit (million);
- X1: turnover (million);
- X2: cash flow (million);
- X3: production year (million);
- ϵ : random variable;
- $\alpha, \beta_i, i = 1, 3$: regression coefficients.

4.2. Definition of variables included in the model and their statistical description:

Annual net profit (Y) is obtained after paying the income tax to the state and after paying the interest to the creditors.

Turnover (X1) is the total sales (invoiced) during a tax year. The figure does not include VAT charged. Turnover comprises the total amount of income from commercial operations carried out by the company, the sale of goods and products in a specified period of time. The total turnover (CA) represents the total volume of business of a company, valued at market prices, the total incomes. It comprises all income from the sale of goods and products, execution of works and provision of services in a given period of time.

Cash flow (X2): The ability to finance future business potential, the remuneration of capital investors and creditors using the obtained operating results, also known as operating cash flow.

Production Exercise (X3): most accurately reflects the company's activity by measuring the entire amount produced in a period. In table 5 (Statistics) were calculated indicators of central tendency, dispersion and the shape of the variables included in multiple linear regression model. To check the intensity of links between each independent variable and dependent variable we construct correlation matrix.

Table 5: Indicators of descriptive data Statistics

		Annual net profit	Turnover	Cash flow	Production Exercise
N	Valid	30	30	30	30
	Missing	0	0	0	0
Mean		38,63	3398,93	198,10	1957,87
Median		32,00	3045,00	188,50	1727,00
Mode		18(a)	2580(a)	180(a)	1647
Std. Deviation		16,984	803,122	21,335	532,030
Skewness		,326	,527	,525	,608
Std. Error of Skewness		,427	,427	,427	,427
Kurtosis		-1,469	-1,348	-1,307	-1,348
Std. Error of Kurtosis		,833	,833	,833	,833
Sum		1159	101968	5943	58736

Table 6 (Correlations) displays Pearson correlation coefficients, significance value (Sig.) for each correlation coefficient and the number of cases considered in the study (N). Note that the value of correlation coefficients on the diagonal is equal to 1, because each variable is perfectly correlated with itself. It finds that there are significant links between net profit and turnover, the correlation coefficient being 0,970, net profit and production year, the correlation coefficient being 0,946, and between net profit and cash flow correlation coefficient being 0,896, Sig. value being less than 0,05.

Table 6: The correlation coefficients Correlations

		Annual net profit	Turnover	Cash flow	Production Exercise
Annual net profit	Pearson Correlation	1	,970(**)	,896(**)	,946(**)
	Sig. (2-tailed)		,000	,000	,000
	N	30	30	30	30
Turnover	Pearson Correlation	,970(**)	1	,948(**)	,994(**)
	Sig. (2-tailed)	,000		,000	,000
	N	30	30	30	30
Cash flow	Pearson Correlation	,896(**)	,948(**)	1	,957(**)
	Sig. (2-tailed)	,000	,000		,000
	N	30	30	30	30
Production Exercise	Pearson Correlation	,946(**)	,994(**)	,957(**)	1
	Sig. (2-tailed)	,000	,000	,000	
	N	30	30	30	30

4.3. Estimation of model parameters

4.3.1. Estimation of parameters Spot

Estimated punctual values using Backward method are presented in Table no. 7.

Table 7: a Dependent Variable: Annual net profit

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-44,392	12,816		3,464	,002
	Turnover	,053	,007	2,519	7,695	,000
	Cash flow	-,005	,096	-,007	,055	,957
2	Production Exercise	-,050	,011	-1,552	4,318	,000
	(Constant)	-45,062	3,813		11,818	,000
	Turnover	,053	,007	2,521	7,899	,000
	Production Exercise	-,050	,010	-1,560	4,888	,000

Based on data from Table no. 7 (Coefficients) we can write estimated equation of multiple regression model net profit.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \epsilon = -45,062 + 0,053 X_1 - 0,050 X_2$$

Interpretation:

The estimated values of the model are:

$\alpha = -45,062$ which means that when the values of all independent variables X_1 , X_2 are 0, the value of the dependent variable (net profit) is equal to -45,062, the company recorded a loss;

$\beta_1 = 0,053$ which means that the dependent variable (Y), namely net profit increases when the value of turnover increases and other variables remain constant;

$\beta_2 = -0,050$ which means that the dependent variable (Y), namely net profit decreases when the value of reduced exercise and other variables remain constant.

4.3.2. Confidence interval estimation of parameters

Confidence interval for the parameter α is given by:

$$\alpha \pm t_{\alpha/2} \cdot S_{\hat{\alpha}}$$

Confidence intervals for parameters β_i are given by:

$$\beta_i \pm t_{\alpha/2} \cdot S_{\hat{\beta}_i}, i = 1, 2$$

Table 8: a Dependent Variable: Annual net profit Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-44,392	12,816		3,464	,002	-70,736	-18,049
	Turnover	,053	,007	2,519	7,695	,000	,039	,067
	Cash flow	-,005	,096	-,007	,055	,957	-,203	,193
2	Production Exercise	-,050	,011	-1,552	4,318	,000	-,073	-,026
	(Constant)	-45,062	3,813		11,818	,000	-52,886	-37,238
	Turnover	,053	,007	2,521	7,899	,000	,039	,067
	Production Exercise	-,050	,010	-1,560	4,888	,000	-,071	-,029

With a 95% confidence intervals we have the following parameters of the equation:

- $\alpha \in (-52,886; -37,238)$
- $\beta_1 \in (0,039; 0,067)$
- $\beta_2 \in (-0,071; -0,029)$

Notice that no confidence interval does contain the value zero, so that we can say that all regression coefficients are statistically significant.

4.4. Testing parameters and the model proposed

4.4.1. Testing the model parameters

For testing parameters we use the Student test. Stages of testing:

a. Of assumptions

Testing net profit in relation to turnover starts to the following assumptions:

$H_0 : \beta_1 = 0$ - Net profit is not significantly affected by turnover

$H_1 : \beta_1 \neq 0$ - Net profit is significantly affected by turnover

b. Choice test

For testing significance of regression coefficients β_1 we use the Student statistic, defined by the report:

$$t = \frac{\hat{\beta}_1 - \beta_1}{\hat{\delta}_{\beta_1}}$$

c. Theoretical value from table

The theoretical value $t_{\alpha/2; n-3} = 4,30$.

d. The calculated value of the test

The sample $t_{calculated} = \frac{b_1}{S_{\hat{\beta}_1}} = 7,899$

e. Decision:

Comparing t_{calc} with t_{tab} shows that $t_{calc} > t_{tab}$, thus rejecting the null hypothesis, the correlation coefficient is significantly different from zero. Therefore the model is correctly specified and can be retained. The same results are obtained by comparing the significance test (Sig) with the level of significance. Sig = 0.000 < 0.05, so it is taken the decision to reject the null hypothesis for the parameter β_1 .

Using SPSS, we get the test results of the regression coefficients presented in Table. no. 8.

Note that the coefficient associated with the Cash flow variable is not associated with a significant level of significance of 0.05, but just for a level of significance of 0.95 or a probability of 5%.

The same conclusion can be drawn by testing the regression coefficient, $t_{calc} > t_{tab}$, it appears that the model is correctly specified.

4.4.2. Testing regression model

Multiple linear regression model testing is performed using F test, in the following approach:

a. Of assumptions

$H_0 : \alpha = \beta_1 = \beta_2 = 0$ - model is not significant or does not explain the dependence between variables;

H_1 : not all simultaneously 0-model coefficients are statistically significant.

b. Choice test

To test the model we use Fisher statistics. For two independent variables ($k = 3$) statistic is:

$$F = \frac{\hat{\eta}^2}{1 - \hat{\eta}^2} \frac{\eta - k}{k - 1} = \frac{\hat{\eta}^2}{1 - \hat{\eta}^2} \frac{\eta - 4}{2} \approx F(2, n - 3)$$

c. Theoretical value from table

The theoretical value $F_{\alpha, (2, n-3)} = F_{0,05, (2, 28)}$

d. The calculated value of the test

The sample is a calculated value of Fisher statistics $F_{calc} = \frac{R^2}{1 - R^2} \frac{n - 3}{2} = 266,404$.

Estimation for the coefficient of determination, calculated in SPSS, is presented in Table. no. 9.

Table 9: Model Summary(c)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,984(a)	,968	,965	3,184	,968	266,404	3	26	,000
2	,984(b)	,968	,966	3,124	,000	,003	1	26	,957

a Predictors: (Constant), Turnover, Cash flow, Production Exercise

b Predictors: (Constant Production Exercise , Turnover

c Dependent variable: annual net profit

e. Decision

For a significance level of 0.05 it is observed that the calculated value of the test is higher than the theoretical value, that is, reject the null hypothesis with a probability of 0.95. In SPSS, Fisher test is carried out using the decomposition process of the dependent variance on two components: variation explained by the regression model and residual variance.

ANOVA table shows the estimates of the two components of variation, the degrees of freedom corresponding estimates of residual variance explained, calculated value of Fisher test and the significance test.

Net profit is explained at the rate of 77,10% of the factors considered, on the basis of linear link.. The value of Sig. F test is less than 0.05, so the model explains the dependence of variables using a significant linear connection.

Table 10: ANOVA(c)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8101,412	3	2700,471	266,404	,000(a)
	Residual	263,555	26	10,137		
	Total	8364,967	29			
2	Regression	8101,381	2	4050,691	414,926	,000(b)
	Residual	263,586	27	9,762		
	Total	8364,967	29			

a Predictors: (Constant), Turnover, Cash flow, Production Exercise

b Predictors: (Constant Production Exercise , Turnover

c Dependent variable: Annual net profit

5. Conclusions

Hypotheses proposed in this study were validated by empirical obtained results, leading to the fulfillment of the research objectives. We identified links between the statistical variables, respectively, we identified factorial axes, which explained the large differences between the statistical units. At the level of the sample analyzed it is observed that the first factorial axis shows that between the variables **turnover**, **production exercise** and **cash flow** there is a strong direct link. This component will be called the **Component Production and Financing Activity** (CPFA). Representative variables for the second factorial axis are **labor productivity**, **the wage share turnover**, **annual investments for development**, this component will be called the **Social Component** (SC).

In the second part of the study we determined the main factors of influence acting on the net profit, indicator of financial performance and guidance for establishing the company's development strategy.

For this process we followed several steps: building a statistical model of estimated equation of multiple regression model net profit, estimating model parameters, testing parameters and the proposed model, testing the model hypothesis. Thus, as a result of the study the factors that have a significant influence on net profit are: turnover and production year.

After testing the hypotheses of linear multiple regression model, it is found that there is a significant connection between the variables set and consider valid profit model represented by the following equation:

$$Y = \alpha + \beta_1 X_1 + \beta_3 X_3 + \epsilon = -45,062 + 0,053 X_1 - 0,050 X_2$$

Modern management issues involve the use of methods and models, mainly statistical and mathematical (econometric), through which to obtain relevant indicators for determining financial performance and direction of company development strategy in the development of relevant decisions concerning the company financing structure.

6. References

- Andrei T. (2008), Boubonnais R., *Econometrie*, Ed. Economică, București;
- Gujarati D. (2004) *Basic Econometrics*, the McGraw-Hill Companies, New York;
- Jaba E. Coord.(2008), *Econometrie aplicată*, Ed. Universității "Alexandru Ioan Cuza ", Iași;
- Jaba E.(2002), *Statistică*, ediția a III-a, Ed. Economică, București;
- Jaba E., Grama A. (2004), *Analiza statistic cu SPSS sub Windows*, Ed. Polirom, Iași;
- Pintilescu C.(2007), *Analiză statistică multivariată*, Editura Universității „Al.I.Cuza”Iași;
- Mironiuc, M.(2006), *Analiză economico – financiară: elemente teoretico-metodologice și aplicații*, Ed. Sedcom Libris, Iași;
- ***Jaba E., Robu I.B.(2011), *Obținerea probelor de audit pentru testarea „Going Concern”*, folosind metode statistice avansate în analiza influenței factorilor asupra ratei îndatorării globale;
- <http://www.aerostar.ro/>;
- http://www.phg.ro/listare_domeniu_detaliu.php?domeniu=REGISTRUL%20COMERTULUI.

STUDY REGARDING THE EVOLUTION OF THE WORKING CAPITAL AND THE NECESSARY WORKING CAPITAL FOR 20 ROMANIAN COMPANIES DURING 2008 – 2010

VASIU Diana Elena

*Ph. D. Student, Doctoral Department, Lucian Blaga University of Sibiu, Sibiu, Romania,
diana.vasiu@yahoo.com*

CIUDIN Adrian

*Ph. D. Student, Doctoral Department, Lucian Blaga University of Sibiu, Sibiu,
Romania, adiciu@yahoo.com*

Abstract: *The working capital represents an often concept used by the financial analysts because it allows the estimation of the financial balance parameters. Necessary Working Capital the expression of achieving the short term financial equilibrium between the amount required and the current resources. This article shows different approaches and methods for calculating the two indicators, by embodying the theoretical aspects with the analyses of these indicators for a number of 20 companies in Sibiu, over a period of three years.*

Key words: Working Capital (WC), Necessary Working Capital (NWC)

JEL classification: G 3, G39

1. Introduction

Within the analysis of the financial balance of an enterprise, a very often used term by the financial analysts is represented by the Working Capital (WC) and The Necessary Working Capital.

The term's content and interpretation have changed during the time, and there are still fluctuations of its meanings, according to each user.

2. The Working Capital

The financial balance results from the comparison of the liquidity (the requested period for changing assets into cash) and the chargeability of the resources, following the traditional regulations of the financial balance according to which usages have to be financed from the available resources of the enterprise, for a period of time equal with the life expectancy of these usages. This prudential rule may be fulfilled by the time a safety margin named working capital is constituted, represented by the excess of the permanent capitals compared to the total gross fixed assets amount, or the excess of the current assets related to the short-term debts (Balteş 2010).

The financial balance of the enterprise also results by studying the bigger masses of the balance sheet: Working capital (*WC*) with the Necessary Working Capital (*NWC*) out of which results the Net Treasury (*NT*). This balance is set according to the concepts of the balance sheet report: the financial view and the functional view (Petrescu 2008), under which the two concepts of the Working Capital, imposed by the economic theory, are determined: Financial Working Capital (FWC) (patrimonial working capital or net working capital), respective Global Net Working Capital (GNWC) (Niculescu 2005).

The patrimonial approach provides that, to ensure financial balance, a special kind of allocation of the resources must be achieved, meaning that the resources have to remain available to the company for a period of time at least equal to that of the need for financing.

According to the financial balance sheet, where budget lines are grouped based on the permanent criteria, accomplishing the financial balance means to finance the long term assets on account of the long term available resources and the financing of the short term assets to be done out of below one year available resources. (Petrescu 2008)

The upper part of the financial report allows the analyze of a first financial equilibrium, as a result of comparing the long-term liabilities (permanent capital) with the long-term requirement (fixed asset) (Petrescu 2008) and calculating the working capital based on the following formulas:

Financial Working Capital = Permanent Capital – Fixed Assets (Niculescu 2005, Balteş 2010)

Financial working capital (FWC) = Permanent capitals (Equity + Long And Medium Term Liabilities) + Provisions + Subsidies For Investments – Permanent Requirement (Net Current Asset) (Petrescu 2008)

According to this method, the long term financial equilibrium can be highlighted, the Working Capital representing that part of the permanent capital left over, after the fixed assets were financed,

assigned by the company for financing current assets. This method also helps highlighting the resources used to build the Working Capital, including the reasons that influenced its fluctuation. The increase of the Working Capital may be recorded by increasing the long-term capital (issuing new shares, bonds, new long-term loans), while a decrease of the Working Capital may be caused by the decrease of the long term capital (reimbursement of the long term loans or bonds) and increase of the net fixed assets (investments).

A positive value of the indicator (Permanent Capital > Net Fixed Assets) reveals a long term equilibrium, being considered as a back-up fund used for financing the current deficit between allocations and short-time financing resources (Ciuhureanu 2009). The increase of the Working Capital leads to an increase of the safety margin, that indicates that a larger part of the current assets are being financed from the long term resources.

A negative value of the Working Capital should represent a warning signal for the company about the risk of remaining out of permanent capital to insure financing of the fixed assets. However, in this case, the company has not the capacity to insure a long term financing resource excess that contributes to cover the short term financing needs, in case that the current assets are below the short-term payables due, that requires an short-term external financing. This situation is often present in the distribution branches, where the fluctuation of the changes in inventories is very fast (below a month) and where there are important suppliers credits within the long-term capital (Petrescu 2008).

Calculating the working capital based on the higher part of the financial balance shows the influence of the financial structure on the financial equilibrium. Under these circumstances, the working capital can be approached starting from the structure of permanent capitals:

- Own working capital (OWC), established as the difference between own capital and net fixed assets, outlining the degree of financial autonomy
 - Borrowed working capital (BWC) established as the difference between the financial working capital and the own working capital
- $BWC = FWC - OWC$ (Petcu 2009)

The Borrowed Working Capital is represented by the level of medium and long term debts that the enterprise has contacted to finance its assets (Balteş 2010).

The existence of an Own Working Capital means that all assets of the enterprise are financed from own capitals, and that the most risky investments are financed from the associates' contributions, considered as risk capital.

The existence of a Borrowed Working Capital higher than the Own Working Capital shows the level of dependence on the financial market. The increase of long term debts to finance fixed and current assets entail a risk of insolvency.

The inferior part of the financial statement allows the calculation of The Working Capital as the difference:

Financial Working Capital FWC = (Current Asset + Prepaid Expences) – (Short Terms Liabilities + Deferred Income) (Petrescu 2008)

Patrimonial Working Capital (Pwc) = Current Assets – Short Term Liabilities (Niculescu 2005)

Net Working Capital = Net Current Assets – Short Term Liabilities – TreasuryLiabilities (Ciuhureanu 2009)

The calculation of The Working Capital located in the inferior part of the financial statement highlights the surplus of the Net Current Assets there were not financed from the Short Term Debts (Petrescu 2008), and which represent a potential cash excess, that may constitute a safety margin regarding the solvability of the company. Lenders consider imperative that working capital exist, as an solvency indicator, in order to consider the financial situation of an entity as being relatively safe.

The correlated analysis of short term liquidities and exigibilities may emphasize the following situations (Petcu 2009):

Current Assets are greater than Current Debts, a situation in which we are dealing with a positive Working Capital. This situation outlines that part of the Current Assets is financed from permanent resources, turning these assets into liquidities allowing the reimbursement of Current Debts on due date and ensuring the enterprise's solvency.

Current Assets are smaller than Current Debts, a situation in which we are dealing with a negative Working Capital. This situation emphasises that part of the Fixed Assets is financed from current resources, contrary to the rules of financial equilibrium.

The weight of the borrowed capital shouldn't be in excess related to the owner's capital (not to exceed 50%) that needs to calculate the Owner's Working Capital (OWC) and of the External Working Capital (EWC):

OWC = owners capital + provisions + investment subsidies – net current assets

EWC = short term liabilities – net current assets

The Owner's Working Capital reveals the influence of the financing structure over the working capital building method, meaning the measure by which the financial equilibrium is provided by own resources, reflecting the financial autonomy of the company.

Foreign Working Capital reflects the long term burden of debt for financing short-term needs.

The Total Net Working Capital (TNWC) is calculated according to the functional balance sheet, defined as that part of the stable resources allocated for financing the cyclic assets (Niculescu 2005). It is calculated as difference between stable and instable resources, or as a difference between the permanent capital and net fixed asset (Ciuhureanu 2009).

Starting from the liabilities, the total net working capital equals the difference between the cyclic asset and functional liabilities (Niculescu 2005).

A larger Working Capital fund than the operating capital needs shows that the company possesses cash, while the contrary indicates the need to attract short term credits for financing the operational needs.

3. The Necessary Working Capital

The Necessary Working Capital is the amount needed to finance the time gaps between the real flows and the cash flows related to the operating activity (Niculescu 2005), respectively the part of operating necessary which is not provided from the operating resources (Balteş 2010).

The structure of Necessary Working Capital includes (Petrescu 2008) on one hand the stocks (of raw materials, finished products, semi-finished products) whose value incorporates the production costs and, on the other hand, the debts, minus the liabilities (from the operation and besides the operation), which corresponds to the gaps between receipts and payments:

$$NFR = (\text{Stocks} + \text{Liabilities} + \text{Expenses in Advance}) - (\text{Short term debts} - \text{Current bank loans} + \text{Deferred income})$$

Similarly to the Working Capital, the report for calculating the Necessary Working Capital is different, depending on the type of balance used.

Based on the functional balance, the Necessary Working Capital is calculated according to the following relation:

$$NWC = [\text{Current assets} - (\text{Reserves} + \text{Investments})] - [\text{Short term debts} - \text{Liquidity Credits} + \text{Balance in hand of the current account}]$$

The financial balance, through the separate reflection of the operation assets and liabilities on one hand and the assets and liabilities outside the operation, on the other hand, (Balteş 2010) allows to outline the two elements of the Necessary Working Capital: The Necessary Working Capital from the operation and The Necessary Working Capital outside the operation.

The Necessary Working Capital from the operation is determined as the difference between the cyclical requirements and the cyclical resources of operation (Balteş 2010), representing that part of the cyclical operation assets that is not covered by resources from of the same type (cyclical), and which has to be financed from sustainable resources of the enterprise (Niculescu 2005).

$$Nfre \text{ (the required working capital from the operation)} = \text{Cyclical assets from the operation} - \text{Cyclical operation resources}$$

A positive value represents a normal situation if it stands between reasonable values (Ciuhureanu 2009) and if it is the consequence of some investments regarding the increase of the financing needs of the operation cycle.

Otherwise, $NWC(\text{The Necessary Working Capital}) > 0$ shows an unfavourable gap between the stocks' and liabilities' liquidation and the exigibility of operation debts, meaning that incomes are decreased and payments are increased, which will affect the payment ability (Petrescu 2008).

A negative value of the Necessary Working Capital reflects a surplus of temporary net resources compared with the current capitals, the temporary needs being smaller than temporary resources that can be mobilised (Petrescu 2008). The negative value of the Necessary Working Capital may represent a favourable situation when it is the result of an optimal production cycle and of a policy that aims accelerating the rotation of current assets, speeding up revenues and relaxing payments with favourable effects on the payment capacity.

The Necessary Working Capital outside the operation is represented by the part of the required working asset which is not related to the operation activity and is determined as the difference between the cyclic needs outside the operation and the cyclic resources outside the operation.

NWCOO (the Necessary Working Capital Outside The Operation) = Different Assets - Different Resources

The level of the Working Capital can be estimated in correlation with the particularity of the field of activity, by reference to certain rates and by combining the horizontal analysis of the balance sheet with the vertical one and by monitoring the financial structure (Balteş 2010 2010, Niculescu 2005).

a) The safety margin rate:

$$SMR = \frac{WC}{Turnover} * 365$$

The safety margin rate is considered optimal when it has values between 30-90 days and it indicates the time during which the enterprise ensures the temporary resources from the Working Capital.

b) The financing rate of the Working Capital Need:

$$FRNWC = \frac{WC}{NWC} * 100$$

The Financing Rate Of The Necessary Working Capital measures the proportion in which the Necessary Working Capital is covered from the permanent resources. Depending on the values of this indicator, the following situation can be encountered:

Table 1: The Financing Rate Of The Necessary Working Capital

FRNWC >0	FRNWC =0	FRNWC <0
The necessary working capital is covered entirely from the permanent capital, creating the conditions for a positive cash flow	The necessary working capital is financed entirely from the permanent capital, the treasury is null	The necessary working capital is partially financed from the working capital and partially from the short term debts, treasury is negative, reflecting a state of financial imbalance

Source: Processing after Balteş 2010

Unlike the Working Capital reflecting the long term equilibrium, the Necessary Working Capital reflects the enterprise's current equilibrium, is more fluctuating, more instable than the Working Capital and it depends on the following aspects: the turnover, the duration of production cycle, the duration of the stock's rotation, the gap between the time of debt recovery and the suppliers' payment deadlines. (Petrescu 2008)

The analysis of the Necessary Working Capital can also be made through the rate method. The most used are: (Niculescu 2005)

a) NWC (necessary working capital) rate

$$R_1 = \frac{NWC}{Turnover} * 360$$

There is a direct relation between the NFR and the Turnover, the level of sales requires having stocks, granting some customer-credits and obtaining some supplier-credits.

The decrease of the NEC indicates an improvement of the cash flow.

b) The Coverage Rate of the Necessary Working Capital (NWC) by Global Net Working Capital (GNWC)

$$R_2 = \frac{GNWC}{NWC}$$

The Coverage Rate of the Necessary Working Capital (NWC) by Global Net Working Capital translates into financial terms the image of how the operation cycle runs. A value higher than one of this rate means that the Working Capital has financed entirely the Necessary Working Capital and a part of the Treasury Assets.

The Necessary Working Capital (NWC) financing rate through treasury

$$R_3 = \frac{Treasury...balance...account}{NWC}$$

Net treasury or the treasury at a given moment allows determining the financial balance between the Working Capital and the Necessary Working Capital (Balteş 2010):

Net treasury = WC (working capital)-NWC (Necessary working capital)

or

WC = NWC + Net treasury

The value of the treasury may be positive or negative, a consequence of the disparity between the Working Capital And The Necessary (resource) Of Working Capital, which may justify the following situations (Petrescu 2008)

Table 2: The value of the treasury

Positive treasury TN > 0	FR > NFR and respectively Reserves > Current Bank loans The cash released allow both the repayment of debts, loans to third parties and/or investments on the financial- monetary market	Negative treasury TN < 0	FR < NFR and respectively Reserves < Treasury loans The company will have to turn to bank loans to finance the necessary working capital
FR > 0 and NFR > 0	The necessary working capital is covered entirely from the permanent resources (FR > 0) that produce availability that can hide under usage of capital	FR > 0 and NFR > 0,	NFR is partly funded from permanent capital (FR > 0) and partly from current bank loans higher than reserves, which requires the analysis of the relative bank risk
FR > 0 and NFR < 0	When resources from the operating cycle (NFR < 0) is added to a surplus of permanent resources (FR > 0) to release a high surplus of cash, which may hide under usages of capital	FR < 0 and NFR > 0,	bank loans cover a part of the fixed assets (FR < 0), NFR and reserves (lower than liquidity credits), which requires reconsidering the financing structure;
FR < 0 and NFR < 0	When operating resources (NFR < 0) cover a high surplus of cash and only a part of the fixed assets (FR < 0). The operating cycle and a part of the assets are funded from short-term debts (suppliers and customer advances), which requires the increase of permanent capitals (stable resources)	FR < 0 and NFR < 0,	When permanent resources cover only a part of the fixed assets (FR < 0), the rest being covered from short-term debts (suppliers, customer advances) and from current bank loans, which requires reconsidering the financing structure, the risk of external financial dependency through a relatively high financial leverage being high

4. Study regarding 20 companies in Sibiu, over a period of three years

In the current economic context in Romania, a positive Working Capital represents, beyond the requirements or the desire to ensure a financial balance, a safety margin for the company, in an increasingly more unstable environment.

To see the evolution of the Working Capital and The Necessary Working Capital, we have analysed these indicators for a number of 20 companies in Sibiu, over a period of three years, respectively 2008-2009-2010. The analysed financial statements have the following features: two of these companies started their activity in 2008, thus the financial statements of these entities for the year 2008 have not been considered. In 2009, one company had its activity suspended temporarily.

For the analysed period of time, the information on the interdependent evolution between WC, NWC and NT are summarised in table 3, the Financing rate of the necessary working capital for each period being also calculated.

Table 3: The Interdependent Evolution of WC, NWC and NT

Comp. no.	2008				2009				2010			
	WC	NWC	NT	FRNWC %	WC	NWC	NT	FRNWC %	WC	NWC	NT	FRNWC %
1.	86427	-49348	135775	-175,14	-275970	-401066	125096	68,81	-1643477	-1853315	209838	88,68
2.	-152296	-275253	122957	55,33	-125326	-204148	78822	61,39	-198933	-262882	63949	75,67
3.	-6080	-6318	238	96,23	-4228	-6419	2191	65,87	-6789	-16225	9436	41,84
4.	69896	6614	63282	1056,79	-117911	-143164	25253	82,36	-146209	-146569	360	99,75
5.	-104265	-111695	7430	93,35	-87547	-100281	12734	87,30	-106117	-113204	7087	93,74
6.					-13991	-14380	389	97,29	-49694	-49755	61	99,88
7.	-1023	-13343	12320	7,67	-8069	-16229	8160	49,72	21746	13452	8294	161,66
8.					8286	-1382	9668	-599,57	91956	2230	89726	4123,59

9.	-131665	-137758	6093	95,58	-150654	-156177	5523	96,46	-230329	-231001	672	99,71
10.	-392197	-414305	22108	94,66	-414429	-545567	131138	75,96	-57511	-132251	74740	43,49
11.	-68956	-78810	9854	87,50	-22759	-30811	8052	73,87	-111055	-107008	-4047,55	103,78
12.	-16609,1	-21121,9	4512,74	78,63	-38180,2	-41179,3	2999,14	92,72	-63767,8	-65644	1876,14	97,14
13.	2895,3	333,87	2561,43	867,19	10467,38	-1912,54	12379,92	-547,30	-12856,6	-13721	864,48	93,70
14.	10269,9	-7424,43	17694,33	-138,33	10269,9	-7424,35	17694,25	-138,33	4001,96	-5734,04	9736	-69,79
15.	-167667	-170294	2627,11	98,46	-149946	-156494	6547,97	95,82	-174889	-176725	1835,83	98,96
16.	-5830665	-6310943	480278	92,39	-6502492	-9158843	2656351	71,00	-2437516	-3754090	1316574	64,93
17.	2998650	2382436	616214	125,86	2219215	925044	1294171	239,90	1625024	834519	790505	194,73
18.	-11245,6	-36634,3	25388,67	30,70	-39548,5	-65433,2	25884,75	60,44	67467,35	41184,36	26282,99	163,82
19.	-190128	-195052	4923,89	97,48	-659460	-676721	17261,12	97,45	-541767	-543981	2213,49	99,59
20.	191535,5	182924,8	8610,64	104,71	116286,1	82426,07	33860,06	141,08	629709	577889	51820	108,97

With one exception (company 11, in 2010), the companies have a positive treasury for each of the analysed periods. There are three situations contributing to a positive treasury:

- FWC>0, NWC<0 The Financing Rate Of The Necessary Working Capital shows that the Necessary Working Capital is financed partly from the Working Capital and partly from short-term debts. The positive treasury is due to the surplus of the temporary net resources as compared to the operating capital and the reserve fund generated by the permanent capital that exceed net fixed assets. Resources from the operating cycle (NWC< 0) that add to the surplus of permanent resources (WC > 0), contribute to the release of cash surplus, which may hide under usages of capital.
- FWC<0, NWC<0, but the extra temporary net resources as compared to the operating capital contributes to the financing of fixed assets. This situation shows, however, possible problems in ensuring long-term financial balance, which requires the increase of permanent capital.
- FWC >0, NWC>0, a situation in which the Necessary Working Capital is covered entirely from the permanent capital, creating the conditions for a positive treasury.

For company no.11, the negative treasury comes against a negative working capital and necessary working capital for the year 2010. Although there is a surplus of temporary net resources compared to the operating capital, temporary needs being smaller than temporary resources that can be mobilized, it is impossible for the company to ensure a surplus of long term financial resources that would help cover short-term financing needs.

A combined analysis of the evolution of the Working Capital and of the Necessary Working Capital during 2008-2009-2010 shows a similar trend, but with different variation rates for both analysed indicators, as shown in table 7. The only exception is for company 14, which also had its activity suspended in 2009. For this company, WC has a decreasing trend, while NWC increases.

During 2008-2009-2010 the positive and negative registered values for Working Capital and Necessary Working Capital for the 20 companies are synthesized in table no 5 and figure 1 and 2

Table 4: The Positive And Negative Registered Values For Working Capital And Necessary Working Capital During 2008-2009-2010

	2008		2009		2010	
	Number	Percentage	Number	Percentage	Number	Percentage
Positive FWC	6	33%	5	26%	6	30%
Negative FWC	12	77%	14	74%	14	70%
TOTAL	18	100%	19	100%	20	100%
Positive NWC	4	22%	2	11%	5	25%
Negative NWC	14	78%	17	89%	15	75%
TOTAL	18	100%	19	100%	20	100%

Figure 1: Working Capital Structure during 2008-2009-2010

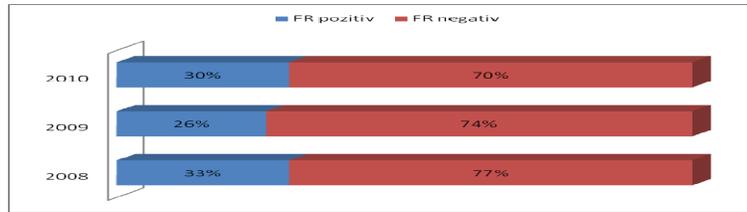
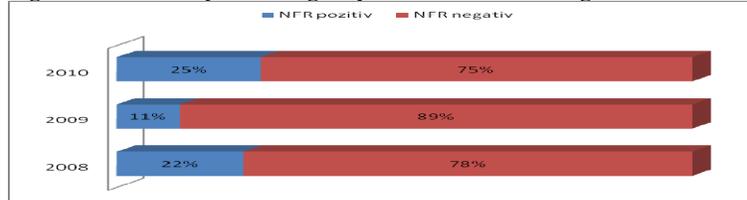


Figure 2: Necessary Working Capital Structure during 2008-2009-2010



Analysing the obtained results, we may conclude that the evolution of the Working Capital is fluctuating. If in 2008, 33% of the analysed companies had a positive Working Capital, the percentage dropped to 26% in 2009 and that increased to 30% in 2010. The situation shows a decrease of the companies’ safety margin, against the decrease of permanent capital and/or the increase of net fixed assets on one hand, i.e. the fact that an increasingly greater part of fixed assets is financed from current resources, contrary to the rules of financial balance. Moreover, it can be noted that the percentage of the companies that had a negative Working Capital is double than that of the companies with a positive working capital, as shown in figure 1.

The evolution of the Necessary Working Capital is also fluctuating. If in 2008, 22% of the analysed companies had a positive Necessary Working Capital, the percentage decreased to only 11% in 2009 and then increased to 25% in 2010. It can be noticed that in each of the analysed years, most of the companies (75%) have had a negative Necessary Working Capital, showing a surplus of temporary net resources compared to the operating capital, temporary needs being smaller than temporary resources that can be mobilized.

Working Capital evolution between 2008-2009 and 2009-2010 is presented in Table No 5

Table 5: Working Capital Evolution Between 2008-2009 and 2009-2010

Working Capital Evolution	2008-2009		2009-2010	
	Number	Percentage	Number	Percentage
Increased FWC	8	40%	7	35%
Decreases FWC	14	60%	13	65%
TOTAL	20	100%	20	100%

With regard to the evolution of the Working Capital during 2008-2009 and 2009-2010, tendencies are constant: the number of companies with increased Working Capital is smaller than those with decreases of the Working Capital. The ratios are 40% increase – 60% decrease, for the period 2008-2009, respectively 35% increase – 65% decrease for the period 2009-2010.

Regarding the influence of the financing structure and the extent to which financial balance is ensured from the company’s capital, reflected through the company’s degree of financial autonomy, the calculation of the working capital based on the upper sheet of the balance represents the structure of the positive FWC, according to table 6.

Table 6: Influence Of The Financing Structure And Calculation Of The Working Capital Based On The Upper Sheet Of The Balance

Com. No.	2008			2009			2010		
	FWC	Own Working capital	Borrowed working capital	FWC	Own Working Capital	Borrowed working capital	FWC	Own working capital	Borrowed working capital

		(OWC)	(BWC)		(OWC)	(BWC)		(OWC)	(BWC)
1.	86427	86427	0	<0			<0		
2.	<0			<0			<0		
3.	<0			<0			<0		
4.	69896	69896	0	<0			<0		
5.	<0			<0			<0		
6.	<0			<0			<0		
7.	<0			<0			21746	-5238,00	26984
8.	<0			8286	8286	0	91956	91956	0
9.	<0			<0			<0		
10.	<0			<0			<0		
11.	<0			<0			<0		
12.	<0			<0			<0		
13.	2895,3	2895,3	0	10467,38	10467,38	0	<0		
14.	10269,9	10269,9	0	10269,9	10269,9	0	4001,96	4001,96	0
15.	<0			<0			<0		
16.	<0			<0			<0		
17.	2998650	-5706525	8705175	2219215	-7766761	9985976	1625024	-8577668	10202692
18.	<0			<0			67467,35	67467,35	0
19.	<0			<0			<0		
20.	191535,5	191535,5	0	116286,1	116286,1	0	629709	629709	0

A high degree of financial autonomy of the companies with a positive FWC can be noticed, for the entire analysed period, with one exception, all companies ensuring their working capital entirely from the company's capital.

5. Conclusions

Therefore, although the analysis was conducted for an economically difficult period of time, companies having to face adverse situations generated by the crisis and recession, there have not been, however, special problems in ensuring a positive treasury. Although most analysed companies have a negative Working Capital, the same situation can be found for the Necessary Working Capital, the evolution of the two indicators being almost perfectly correlated. Operating resources NWC (< 0) cover an increased liquidity surplus and only a part of the fixed assets (WC < 0). Financing through short-term debts of a part of the fixed assets requires the increase of permanent capital (stable resources) and requires special attention to achieve long-term balance. Since the working capital has negative values at most of the companies, this is a negative aspect in assessing the solvency by creditors, which might bring possible difficulties in obtaining long-term loans. Therefore, the increase of permanent capital should be made from ownership capital.

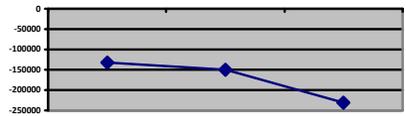
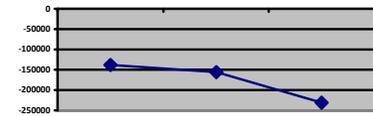
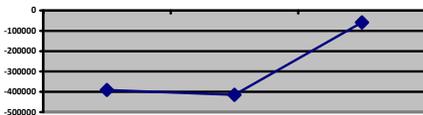
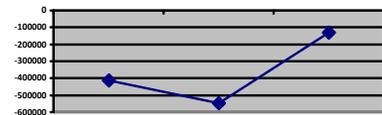
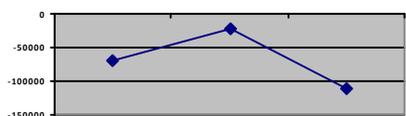
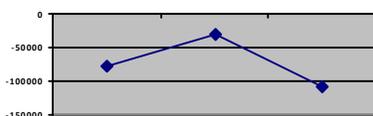
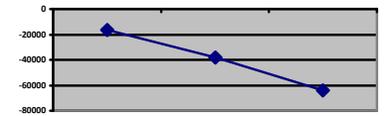
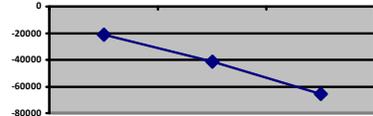
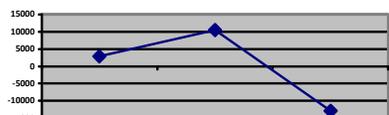
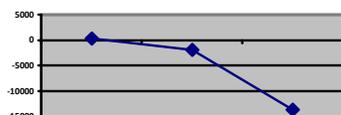
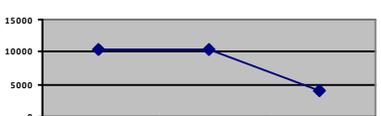
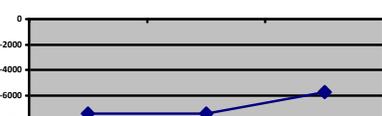
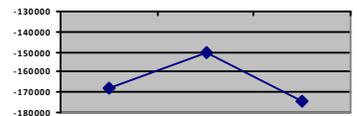
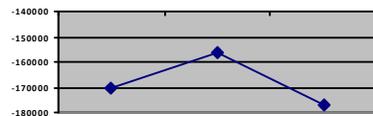
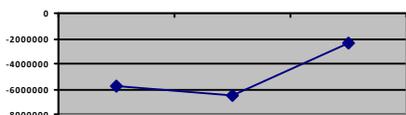
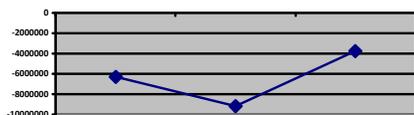
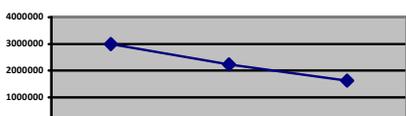
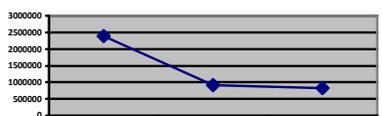
6. References

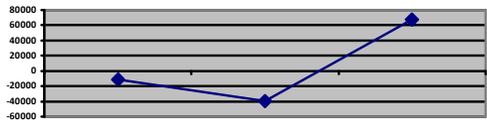
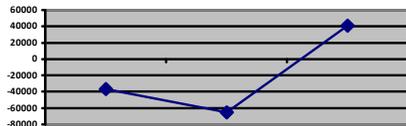
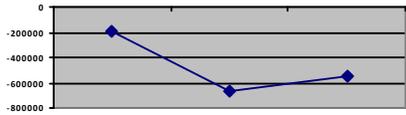
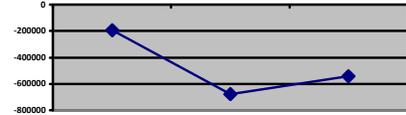
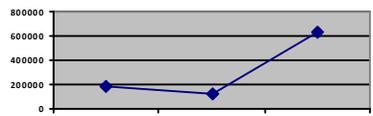
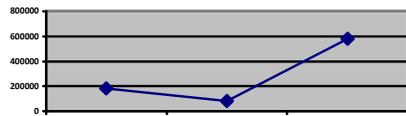
- Baltas, Nicolae, (2010) *Analiză si diagnostic financiar*, Editura Universității "Lucian Blaga", Sibiu
- Ciuhureanu, Alina Teodora (2009) *Management financiar*, Editura Universității „Lucian Blaga” din Sibiu, 2009.
- Halpern, Paul; Weston J. Fred; Brigham F. Eugene (1994) *Finanțe manageriale*, traducere, Ed. Economică, Bucuresti
- Niculescu, Maria (2005) *Diagnostic global strategic*. Vol II. Diagnostic financiar, Ed. Economică, Bucuresti
- Petcu Monica (2009) *Analiza economico-financiara a intreprinderii* - Ed. Economică, Bucuresti,
- Petrescu, Silvia (2008) *Analiză si diagnostic financiar-contabil: ghid teoretico-aplicativ*, Ed. CECCAR, Bucuresti

Annex 1:

Combined Analysis of the Evolution Of The Working Capital and of the Necessary Working Capital During 2008-2009-2010

Comp. No.	Evolution Of The Working Capital Between 2008-2009-2010	Evolution Of The The Necessary Working Capital Between 2008-2009-2010
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		

<p>18.</p>		
<p>19.</p>		
<p>20.</p>		

STUDY OF DETERMINANT FACTORS OF DIVIDEND POLICY PROMOTED BY COMPANIES LISTED ON BUCHAREST STOCK EXCHANGE

VINTILĂ Georgeta

Ph. D. Professor, Faculty of Finance, Insurance, Banking and Stock Exchange /Department Finance, Academy of Economic Studies, Bucharest, Romania, vintilageorgeta@yahoo.fr

MOSCU Raluca Georgiana

Ph.D. Student, Faculty of Finance, Insurance, Banking and Stock Exchange /Department Finance, Academy of Economic Studies, Bucharest, Romania, moscu.raluca@yahoo.com

Abstract: *Dividend policy is one of the most intriguing topics in financial research. Even now, economists provide considerable attention and thought to solving the dividend puzzle, resulting a large number of conflicting hypotheses, theories and explanations. This paper aims to determine the dividend policies for listed companies on Bucharest Stock Exchange and to explain their dividend payment behavior. Ten hypotheses were investigated using a series of models. So this paper investigates why companies have established different dividend policies using firm level data from Romania. The models considered the impact of firm profitability, return on assets, previous year's dividend, ownership structure, government ownership, firm size, free cash-flow, leverage ratio, growth opportunity and market to book ratio on dividend payout ratios.*

Keywords: dividend policy, corporate governance, determinants, agency theory, ownership

JEL classification: G 32, G 35

1. Introduction

Dividend policy is one of the key elements of financial management, a task and responsibility for the company's managers. Dividend policy has a front place in financial literature and arises enough debates both on developed markets, as within emergent ones. Many authors have attempted to explain why some companies distribute or they should distribute dividends and why others don't pay out, building empirical models to explain the dividend policy. Although many studies have carefully addressed this issue there are still factors that influence dividend policy and which have not yet been treated. Black's statement (1976) is significantly in this respect - "The more you try to create a complete picture of dividend policy the more it resembles to a puzzle whose pieces do not fit".

The main objective of this study is to identify the behavior of Companies Listed on Bucharest Stock Exchange in terms of dividend policy practiced. It will also check if the influential variables found in the studies mentioned have impact over dividend policy practiced by companies in Romania.

The paper is structured as follows: Section 2 is allocated to Quotations studies that are the fundamental theoretical of this research and the main determinants of dividend policy are presented, in Section 3 the methodology and used variables are described, and Section 4 contains the results of empirical testing. The last part is devoted to Conclusions.

2. Literature review

Dividend policy is a controversial topic in financial theory and in real-world of company finance. Identifying the most appropriate dividend policy is considered an important decision.

The vast majority of studies rely on a number of determinants of dividend policy from a certain country. Travlosetal. (2001), Wanget. al. (2002), Adaoglu (2000), Manos (2002) have studied the issue of dividend policy and factors influencing dividend distribution rate. Ananalysis of dividend policy of a certain country requires research of as many theoretical and practical determinants as possible that may have impact on the rate of dividend distribution

Research follows to highlight the factors influencing the dependent variable (the dividend distribution rate) Thus, from the results of previous studies we assume that the following as independent variables:

Earnings per Share -is the main explanatory variable of the company's ability to distribute dividends. Managersgive importance tothis indicator, since it providesan overviewof howthatcompany evolves. Profitability of company is expressed as earnings per share, or as rates of profitability that are the main indicators that show the company's ability to distribute dividends. Litner (1956) showed that

dividend income is influenced by the current year profit and by the dividend of the previous year. There are studies showing that the only factor explaining the dividend policy of a country is profit. Companies in countries such as Turkey, China, Malaysia distributes dividends based on earnings, unlike companies in Great Britain whose dividend distribution policy is very clear - all companies grant annually growing dividends. These conclusions were obtained in studies of authors Adaoglu (2000), Wang et. al (2002).

Return on Assets - as an explanatory variable rate dividend distribution is relevant because a company's profitability impact is significant and has positive effect on dependent variable (the dividend distribution rate), the more the company is considered from a developed country (Han et al., 1999).

Dividend distributed in the previous year. Among the first explanatory variables entered into the regression model was the dividend in the previous moment (DIV_{T-1}), because they wanted to be investigated how the distribution rate is influenced by the historical dividend. Bhattacharya (1979) and Miller and Rock (1985) explain how management can use dividends to signal the true value of the firm. In the real world, managers believe that companies that pay a steady flow as dividends are preferred, because shareholders want stable payments and no significant change on dividend level.

Ownership structure. Renneboog and Trojanowski (2006), Faccio, Lang and Young (2001) confirms that the companies in which the shareholder has a higher percentage of the social capital of the Company shall distribute dividend rates lower than other companies. The existence of concentrated ownership leads to a decrease in the rate of dividend distribution; the main investors are more interested in the profit obtained to be reinvested. Renneboog and Trojanowski (2006) have shown for the UK that the dividend is lower for companies that have a controlling shareholder. Faccio, Lang and Young (2001) showed that the countries practicing the Continental model, dividend rates are higher if there are more majority shareholders and not a single one.

State ownership. Authors like Gul (1999) considers that there is a positive relationship between the two concepts "dividends" and "state" as those companies that remained state-owned institutions are easier to finance their investments and they can afford to distribute more dividends. Al-Kuwari (2009) added that on an emerging market, where legal protection is low, the government wants to build a reputation for companies to avoid the exploitation of minority shareholders and as such it pays big dividends. This action is especially needed for small stock exchanges, start-ups.

Companies characterized by "Common Law" legislation, where the protection of minority shareholders is considerably higher offer more dividends that companies that operate under the "Civil Law" system. In Romania it is known that management practices are not well monitored by regulators, this is why tendency of managers to allocate dividends money as low as possible are sometimes observed. If you would give higher dividends they would be a mechanism which could reduce the amount that a manager has available and also the minority shareholders will be rewarded for their investment in the company, but they will closely monitor the practices of manager.

Free Cash-flow. A company without liquidities can not give dividends open-handedly. Free cash flow is the spark that starts the agent conflict that takes place between shareholders and managers of companies that will engage in wasteful practices because they have extra cash. To counteract these types of practices the investors decide dividend distribution not to leave a large part of cash available to managers. Hypotheses refer to free cash flow suggest that firms with low growth opportunities and a higher cash flow would have to pay higher dividends to prevent the situation in which managers invest in capital cost or lose the cash flow investing it in ineffective projects. Alli et. al (1993) believes that cash flow is more important in explaining the dividend policy, the current profit can be influenced by accounting practices and may not accurately reflect the company's ability to distribute dividends. Amidu and Abor (2006) have shown a positive relationship between free cash flow and distribution rates.

Firm size. Jensen and Meckling (1976) have shown that between firm size and costs size of agent there is a positive relationship due to low capacity of shareholders to monitor the activities of managers. Minority shareholders can force payment of dividends as large as possible. In this way it will increase the potential need for external financing, which will lead to increased monitoring due to the existence of creditors. Holder et al. (1998) revealed that larger firms have better access to capital markets and find it easier to raise funds at lower costs, allowing them to pay higher dividends to shareholders. This demonstrates a positive association between dividend payouts and firm size. This positive relationship is also supported by Manos (2002), Travlos et al. (2002). Avazian et al. (2006) study result showed that there is a positive and significant relationship between dividend payout and firm size. This result shows that large-sized firms prefer to pay more dividends.

Growth opportunities. Fast growing companies require external financing, because the need for working capital normally exceeds cash flow from sales. Rozeff (1982), Lloyd et al. (1985), Collins et al. (1996), Anil and Kapoor (2008) show that there is a negative relation between dividend payments and the sales growth rate.

Debt to equity ratio. The next explanatory variable which was introduced into the regression model was the indicator of financial leverage, as it was under the assumption research according to which first indebted companies meet their payment obligations protecting creditors and especially the relationship with them and then they turn to operations of dividends distribution. Pruitt and Gitman (1991) indicate that risk affects dividend policy of companies regarding dividends payment. High-risk companies will pay lower dividends. Rozeff (1982), Lloyd et al. (1985), Collins et al. (1996) show that there is a negative relation between dividend payments and the financial lever.

Market to Book Ratio. This independent variable reflects the market value of company's capital compared to the amount that the shareholders have contributed to the company. Ho (2003), who believes that growth opportunities firms spend more on new projects for expansion. Therefore, the dividends paid to shareholders are lower. The same conclusion was demonstrated by Omran, Pointon (2004) who specifies the importance of this variable by the negative influence that manifests on the dividend.

3. Research methodology

3.1. Data base

To create the database associated with the dividend policy study there were used financial and economic information available for 63 companies from category I and II, section Bucharest Stock Exchange for 2010. There were initially selected 70 listed companies, but of which there were seven companies that do not have the necessary information or they were listed from 2010.

By empirical testing it is trying to find out the most important factors influencing dividend distribution rate for companies listed on Bucharest Stock Exchange. To achieve this study it was considered necessary research in quantitative terms of dividend policy at the most important companies listed on stock exchanges. Financial data used were taken from the annual reports of listed companies: www.bvb.ro - site of the Bucharest Stock Exchange, www.ktd.ro - website of Investment Consultancy Society KTD Invest SA, www.kmarket.ro - site of the Services Society of Intercapital Financial Investment Invest SA

Analysis starts from economic and financial indicators identification: amount of dividend, market capitalization, net profit, gross profit, net profit per share (EPS), total debt, total assets, fixed assets, working assets, free cash flow, market to book ratio, etc. It was also included a number of elements in percentage value, of which indicators such as: dividend distribution rate, economic profitability (ROA), market to book ratio (MBR), etc. Database was supplemented by information taken from the website of companies listed, information on ownership structure (dispersed / concentrated) or ownership (state / private).

Since the present paper treats dividend policy, quantitative analysis was initially directed to the formulation of ideas concerning the dividend policy practiced by listed companies (waste policy, the dividend constant or increasing rate policy or the constant or increasing dividend policy).

In 2010 presented in Table 1 is the overall situation of the number of companies according to activity sector they belong. It is registered a total of 11 sectors selected by filtering the companies listed on Bucharest Stock Exchange, Class I and II. Note that higher average rate of dividend distribution occurs in Utilities sector, where we have recorded a single company (Transelectrica and Transgaz), followed to a distance of two percents of the dividend distribution rate offered by the Pharmaceutical sector (Antibiotice, Biofarm and Zentiva). We may say that profitable firms in mature sectors tend to pay more income as dividends than the ones from younger industries.

Table 1: Classification of companies which offer dividends depending on the activity sector

Sector	Number of companies	Average of dividend distribution rate on sector (%)
Capital property	14	10.78
Pharmaceuticals	3	19.53
Commodity	3	24.00
Energy	8	21.52
Raw materials	12	13.00
Financial services	9	39.71
Technology	2	0.00
Transports	1	0.00
Utilities	2	88.9
Hard-goods	6	0.00
Services	3	18.00

In table 2 it is presented dividend average on year 2010, which reach the value 0.49 Ron/share, noticing that a certain recovery after economic crisis period in which companies listed on Bucharest Stock Exchange have stopped dividends payment. Average of dividend distribution rate for 2010 reaches the value of 19.04 %.

Table 2: Dividend per share and dividend distribution rate compared to average dividend per share / average dividend distribution rate

Average dividend in absolute value		Average rate of dividend distribution	
0.49 lei/share		19.04%	
Dividend < Dividend average	Dividend > Dividend average	Dividend Rate < Average Dividend Rate	Dividend Rate > Average Dividend Rate
62 companies	1 companies	45 companies	18 companies

Groups from Table 2 highlight the position which most of the companies listed on Bucharest Stock Exchange have adopted, regarding dividend distribution rate compared to its average. In 2010 a total of 45 companies practice much lower than average distribution rate (calculated as the arithmetic mean of rates of each company of the 63 companies analyzed). So more companies distribute a dividend rate lower than the average which means that a percentage of 28.5% of companies defines the average increase in proportion to the power of distribution of other companies. This is seen on an even greater extent in the year 2010 when only 18 out of 63 companies distribute a higher dividend rate than the overall average.

To analyze the amount distributed as dividend compared to the annual average it is observed that in the year 2010, one company, TGN, distribute a dividend higher than the average which means that a percentage of 1.5% of companies cause an increase in average dividend compared with other companies power distribution.

Table 3 shows how the Romanian companies trace their dividend policy. Thus, there is a trend in the dividend policy in the period 2009-2010: 38 companies have not distributed dividends, so they practice a residual distribution policy, while 23.81% of them (15 companies) were able to pay an increasing dividend, which may indicate either a revival of business activity or a policy to sustain the investors' interest. It also developed that 3 companies maintain a constant dividend, this policy being able to administrate to favorable effects to potential shareholders (greater attractiveness to invest), but on the other hand if the distribution policy becomes not-favorable it may conduct to a decrease of the company's value.

It is also found in Table 3, the way companies in Romania use a policy of dividend distribution, in terms of rate distribution. Thus 60.31% of companies do not give dividends, so the lack of attraction for listed companies seems not to be something astonishing.

Table 3: Analysis of the number of companies listed on Bucharest Stock Exchange depending on the type of dividend paid in the period 2009 - 2010

Type of Dividend	No. of Companies	Percent Companies	Type of Dividend Rate	No. of Companies	Percent Companies
	2009-210			2009-210	
Dividend = 0	38	60.32%	Dividend Rate =0	38	60.32 %
Dividend = ct	3	4.76 %	Dividend Rate = ct	1	1.59 %
Increasing Dividend	15	23.81 %	Increasing Dividend Rate	13	20.63 %
Decreasing Dividend	7	11.11 %	Decreasing Dividend Rate	11	17.46%
Fluctuant Dividend	0	0.00 %	Fluctuant Dividend Rate	0	0.00%
Total	63	100 %	Total	63	100 %

As the dividend constant rate policy, it appears that it is practiced by a single company. Although tempting by simplicity, this distribution policy is easy to promote. Although, in terms of unsatisfactory performance, the company will distribute for recovery / dividend ponderosity of profit equal to the ones they would distribute if they would get very good results.

Waste policy is preferred by companies that focus on business growth. While there will be other investment opportunities characterized by the way of a positive NPV (VAN), the company will not distribute dividends. Note that the practice of residual dividend is preferred by companies listed in Romania. They believe that profits are not sufficient, or shareholders will be paid based on future earnings. Dividend policy, in terms of theory, seems incompatible with the logic of stock investors, who perceive not-distribution of profit as dividends as a signal of poor performances. If we study the information on ownership structure we will see that in Romania companies with concentrated ownership prevails which provide greater benefits through holding a majority stake than through dividends.

3.2. The quantitative analysis model

The second part of the research focuses on quantitative analysis through econometric study. In this sense it has appealed to several of the regression models that analyzes relatively, the way in which the dividend distribution rate is influenced by a number of independent variables. Multiple regression models to be used for testing relations between variables are:

$$Y = \alpha + \beta_1 \cdot X_1 + \beta_2 \cdot X_2 + \dots + \beta_k \cdot X_k + \varepsilon_{it}$$

Where, Y - dividend rate (RDIV), X_k - independent variables *EPS*, *ROA*, *DIV_{t-1}*, *OWN*, *GOV*, *FCF*, *SIZE*, *G*, *D/E*, *MBR*, β_k – regression coefficients, α – the coefficient which expresses the influence of factors not included in the model and ε_{it} - the error variable.

In the previous section there were mentioned some relationships that were drawn from the literature, the relationship established between the rate of distribution of dividends and some determinants of dividend policy (economic - financial indicators). Thus Table 4 lists the variables used in previous researches and positive / negative sign associated to the regression coefficient.

Table 4: Proxy Variables Definition and Predicted Relationship

Proxy Variables	Definitions	Predicted Sign
1. EPS	Earnings per Share	+
2. ROA	Return on Assets	+
3. DIV _{t-1}	Dividend distributed in the previous year	+
4. OWN	Dummy variable for ownership structure: 1 - majority shareholders, 0 - minority shareholders	-
5. GOV	Dummy variable for ownership structure: 1 - state ownership, 0 - private ownership	+
6. FCF	Free Cash-Flow	+
7. SIZE	Firm size calculated as natural logarithm of market capitalization of each company	+
8. G	Sales Growth	-
9. D/E	Debt to Equity Ratio (Total liabilities/Shareholders' equity)	-
10. MBR	Market to Book Ratio	-
Data from annual, semestral reports published on the following sites: www.bvb.ro – Site of Bucharest Stock Exchange www.ktd.ro – Site of Investment Consultancy Society KTD Invest SA www.kmarket.ro – Site of Services Society of Intercapital Financial Investment Invest SA Websites of companies listed on Bucharest Stock Exchange		

To identify the magnitude and direction of the connection which is established between the aforementioned independent variables and the dividend distribution rate in Romania in 2010 it will be estimated regression coefficients β_k for each of the following equations:

<p>Equation (1): $RDIV = \alpha_i + \beta_1 * EPS + \beta_2 * ROA + \beta_3 * DIV_{T-1} + \beta_4 * OWN + \beta_5 * GOV + \beta_6 * FCF + \beta_7 * SIZE + \beta_8 * G + \beta_9 * D/E + \beta_{10} * MBR + \varepsilon_{it}$</p> <p>Equation (2): $RDIV = \alpha_i + \beta_4 * OWN + \beta_5 * GOV + \beta_9 * D/E + \beta_{11} * MBR + \varepsilon_{it}$</p> <p>Equation (3): $RDIV = \alpha_i + \beta_3 * DIV_{T-1} + \beta_4 * OWN + \beta_7 * SIZE + \beta_9 * D/E + \varepsilon_{it}$</p>

4. Empirical results

With financial data at their disposal for companies listed in Romania, in the year 2010 there were tested connections between the dividend distribution rate (RDIV) and a number of determinants of dividend distribution policy, the results being summarized in the table 7.

Table 7: Results of regression equation (OLS method) regarding determinants of dividend policy for companies listed in Romania in 2010

Equation	Equation (1)		Equation (2)		Equation (3)	
	Regression Coefficients	Prob.	Regression Coefficients	Prob.	Regression Coefficients	Prob.
X ₁ (EPS)	-0.049	0.513				
X ₂ (ROA)	0.259	0.222				
X ₃ (DIV _{t-1})	0.112	0.273			0.193	0.051
X ₄ (OWN)	-0.208	0.030	-0.244	0.007	-0.172	0.059
X ₅ (GOV)	0.306	0.029	0.390	0.001		
X ₆ (FCF)	0.072	0.595				
X ₇ (SIZE)	0.015	0.477			0.046	0.013
X ₈ (G)	-0.032	0.733				
X ₉ (D/E)	-0.326	0.007	-0.346	0.002	-0.282	0.015
X ₁₀ (MBR)	0.195	0.024	0.223	0.001		
R ²	0.4017		0.3465		0.2973	
F-statistical	3.49		7.68		6.13	
P (F-statistical)	0.0014		0.000048		0.00034	

For companies listed on Bucharest Stock Exchange, in Equation (1), regression equation containing all independent variables, show those four factors are statistically significant: OWN, GOV, D/E, MBR.

In companies listed on Bucharest Stock Exchange prevails a concentrated ownership structure (over 80% of the companies that set up the database). In the analysis with dummy variable OWN, which takes the value 1 for a concentrated ownership structure adversely affect the dividend distribution rate (RDIV). The majority ownership prefers to acquire a gain of the capital as large as possible at the expense of a gain from dividends (which are subject to double taxation). Benefits can be higher than money is reinvested in the company, by building adequate future cash flows.

Companies where the shareholder holds a large percentage of the company's social capital shall distribute dividend rates lower than other companies.

Gul (1999) observed a negative connection (-0.61) between the distribution ratio and dummy variable that takes the value 1 for those Korean companies called "chabeol", held by a majority concentrated ownership formed by families and characterized by political affiliations.

Negative relationship between D/E (debt ratio) and RDIV occurs in companies listed on Bucharest Stock Exchange, the regression coefficient is equal to - 0.272 in Equation (2). Due to volatility of cash, companies resort to external financing, whose costs conduct to reduction of amounts paid as dividends. Kowalenski and Stetsyuk (2007) note that for their study based on the practice of distributing dividends for 110 companies in Poland, the degree of indebtedness has a regression coefficient equal to - 0.12, with a smaller impact than in the study of practice of companies listed on Bucharest Stock Exchange.

There is a positive relationship between MBR (as an independent variable) and RDIV (as the dependent variable) with a regression coefficient equal to 0.223 for data on the dividend policy of listed companies in Romania. A positive relationship between MBR as an independent variable and RDIV the dependent variable obtain authors Gill, Biger, Tibrewala (2010), with a coefficient equal to 0.015, lower than what was obtained for data on the dividend policy of listed companies in Romania. A large MBR can lead to a higher growth company, so more cash used for expansion. This conducts to investment rather than dividends. Companies in Romania, with high growth opportunities tend to face different financing alternatives and therefore pay more in dividends. We may argue that for these companies we can not speak of the probability of bankruptcy, this is why they may provide dividends.

In the Equation (2) model another factor whose influence is analyzed is GOV dummy variable that takes the value 0 for private companies and the value 1 for the state-owned companies. The fact that this variable has a positive and significant influence in models (1) and (2), the regression coefficient varies from 0306 to 0390. It is known that the vast majority of companies listed on Bucharest Stock Exchange are private companies (over 90% of the companies included in the present research) and that there are very few companies today where the Romanian state is the majority shareholder. However, the state remains a key shareholder in large companies listed on Stock Exchange (Transelectrica, Transgaz, Oil Terminal, etc.)

A possible reason for variable between GOV and RDIV where there is a positive relationship it is that in emerging countries, where the protection for minority shareholders is low, investors should be protected. For the government to be seen as acting on behalf of minority investors, state companies can pay big dividends to avoid exploitation of minority shareholders, and thus achieving a reduction of agent conflicts.

On the other hand the State is a strong investor and has no difficulty in raising external funds to finance investments in the companies it owns. In contrast, for firms with low capital it is more likely to experience difficulties in raising funds, therefore they could depend on retained earnings for investment projects, thereby reducing the dividend payment.

Al-Kuwari (2009) observes a positive relationship between state-owned property and the rate of dividend distribution, obtaining a regression coefficient equal to 0.9, higher than the one for companies in Romania for 0.390 only.

Pruitt and Gitman (1991) noticed that past dividends have a great influence on current dividends. Companies should make their estimates on how much they should pay as a dividend for a certain year, taking into account dividends from recent years. Adaoglu (2000) showed in his study conducted on companies listed on Istanbul Stock Exchange a positive relationship between DIV_{t-1} and RDIV, obtaining a positive regression coefficient equal to 0.005. If DIV_{t-1} determining factor (dividend in previous year) shows a positive regression coefficient ($\beta_3 = 0.193$) in Equation (3). Thus an increase in dividend per

share in 2009 led to an increase in the rate of dividend distribution in 2010. In these circumstances we can say that in the last two years companies in Romania are trying to pay attention to investors by distributing an increasing dividend rate. Listed companies rely on attracting new investors and they can also provide current shareholders confidence for investment already made.

Company size appears to be an independent variable, significant in explaining dividend policy in the Equation (3) regression model. Although the regression coefficient has a low value (0.046), its positive sign confirms that company size is directly proportional to the amount of dividend paid. Large companies tend to be more diversified than smaller firms, they have a certain financial maturity, they have easier access to capital markets, which reduces their dependence on internal funds, they are less sensitive to financial problems, and able to pay higher dividends to shareholders.

Fama and French (2000) show a positive correlation between company size and distribution rate for firms belonging to indices NYSE, AMEX, NASDAQ, from 1963 to 1998. Chen and Dhiensiri (2009) obtained a positive and equal to 0.01 regression coefficient specific to company's size. Manos (2002) showed the same positive relationship for the companies listed on the Bombay Stock Exchange obtaining a relationship between two variables equal to 0.042.

5. Conclusions

From the analysis of dividend policy practiced by companies listed on Bucharest Stock Exchange as compared with the case studies cited, significant differences are standing out, referring to Romania on the one hand, a developing country and on the other hand to the practice of developed economies. Trend is observed for listed companies in Romania is that of allocating a zero dividend, on the one hand we may say that companies in Romania practice residual dividend theory (distribute dividends only after completing financing investment projects) or we talk about a period characterized by economic crisis, during which companies do not give dividends, or because no profit, or because the obtained profit is used for recovery. Practice of Romanian companies to not reward shareholders for the accomplished investment in the capital of listed companies, shows that from this point of view, of distribution of dividends, companies listed on Bucharest Stock Exchange confirm their unattractiveness. So the signs are not appropriate, making investors not feeling confidence, or safety.

Analyzing dividend policy practiced by companies listed on Bucharest Stock Exchange, it appears that dummy variable that takes unit value when ownership is a concentrated one adversely affects dividend distribution rate, so a majority ownership does not want dividends distribution to minority, as the benefits can be higher if the money is reinvested in the company, by building adequate cash flows.

Company size is an explanatory variable rate of dividend distribution. Large companies are able to manage much faster and easier financial problems, and thus they are able to pay dividends to the shareholders regardless of economic situation.

The relationship established between leverage and dividend distribution rate is negative, which demonstrates that the agent issues are arising from relationship lenders and shareholders too. Because companies in Romania operate under the "Civil Law" system, we can assume that the manager and majority ownership work together, they want to take advantage from the absence of control of minority shareholders. But creditors control occurs whenever companies resort to debt. Thus cash flow remained available to managers to pay shareholders and creditors will be initially allocated to cover interest and principal, and so the remaining amount to the investors' disposal is decreasing considerably.

Companies in Romania will make estimates on how much they should pay as a dividend for 2010, taking into account dividends from the previous year. So dividend policy practiced in 2009 is important to base the dividend policy in 2010.

This study tries to answer through empirical analysis the following question: which are the main determinants of dividend policy practiced by listed companies in Romania in 2010. Explanatory variables of dividend policy practiced by companies listed on Bucharest Stock Exchange are leverage, ownership structure, ownership, dividend from previous year, company's size and market to book ratio. Along with these factors, future research may prove that dividend policy can be explained by some differences in macro-economic environment, transaction costs, of degree of development and by other institutional factors.

6. References

- Adaoglu, C., (2000) *Instability in the Dividend Policy of the Istanbul Stock Exchange (ISE) Corporations: Evidence from an Emerging Market*, Emerging Markets Review 1, p. 252-270.

- Aivazian, V.; Booth, L.; Cleary, S. (2003) *Do Emerging Market Firms Follow Different Dividend Policies From U.S. Firms?* Journal of Financial Research, 26(3), p. 371-387.
- Al-Kuwari, D. (2009) *Determinants of the Dividend Policy in Emerging Stock Exchange: The case of GCC Countries*, Global Economy și Finance Journal, Vol. 2 No.2, p. 38-63.
- Alli, L.; Qayyum, K.; Gabriel, G. (1993) *Determinants of Corporate Dividend Policy: A Factorial Analysis*, The Financial Review 28, p. 523-547.
- Amidu, M.; Abor, J. (2006) *Determinants of Dividend Payout Ratios in Ghana*, J Risk Finance, 7, p.136-145
- Anil, K.; Kapoor, S. (2008) *Determinants of Dividend Payout Ratios – A study of Indian Information Technology Sector*, International Research Journal of Finance and Economics, Issue 15, p. 63 – 70.
- Black, F. (1976) *The Dividend Puzzle*. *Journal of Portfolio Management*, 2, p. 5-8.
- Chen, J.; Dhensiri, N. (2009) *Determinants of Dividend Policy: The Evidence from New Zealand*, International Research Journal of Finance and Economics, Issue 34 p. 18-28.
- Collins, M.C.; Sacena, A.K.; Wansley, J.W. (1996) *The role of Insiders and Dividend Policy: a comparison of regulated and unregulated firms*, J. Finance Strategic, 9, p. 1-9.
- Faccio, M.; Lang, L.; Young, L. (2001) *Dividends and Expropriation*, American Economic Review 91, p. 54-78.
- Fama, E.; Babiak, H. (1968) *Dividend Policy: An Empirical Analysis*, Journal of the American Statistical Association, 63, p. 1132-1161.
- Fama, E.; French, K. (2001) *Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to Pay?*, Journal of Financial Economics, 60, p. 3-43.
- Gill, A.; Biger, N.; Pai, C.; Bhutani, S. (2009) *The Determinants of Capital Structure in the Service Industry: Evidence from United States*. Open Bus, 2, p. 48-53.
- Gul, F.A.; Kealey, B.T. (1999) *Chaebol, Investment Opportunity Set and Corporate Debt and Dividend Policies of Korean Companies*, Review of Quantitative Finance & Accounting, 13(4), p. 401-416.
- Han, Ki.; Lee, S.H.; Suk, D. (1999) *Institutional Shareholders and Dividends*, Journal of Financial and Strategic Decisions 12, p. 53-62
- Holder, M.E.; Langrehr, F.W.; Hexter, J.L. (1998) *Dividend policy determinants: an investigation of the influences of stakeholder theory*, Financial Management 27(3), p. 73-82.
- Ho, H. (2003) *Dividend Policies in Australia and Japan*, International Advances in Economic Research, 9(2), p. 91-100
- Jensen, M.; Meckling, W. (1976) *Theory of the firm: Managerial Behavior, Agency Costs and Ownership Structure*, Journal of Financial Economics, 6, p. 305-360.
- Jensen, M.C. (1986) *The agency Cost of Free Cash Flow, Corporate Finance and Takeover*, American Economic Review 76(2), p. 323-329.
- Kowalenski, O.; Stetsyuk, I. (2007) *Does Corporate Governance Affect Dividend Policy? Evidence from Poland*, <http://www.ifc.org>.
- La Porta, R.; Lopez-de-Silanes, F. ; Shleifer, A. (2000) *Agency Problems and Dividend Policies Around The World*, Journal of Finance, 55, p. 1-33.
- La Porta, R.; Lopez-de-Silanes, F. ; Shleifer, A. (1998) *Law and Finance*, Journal of Political Economy, p. 1113-1155.
- Litner, J. (1956) *Distribution of Income of Corporations Among Dividends, Retained Earnings and Taxes*, American Economic Review, p. 97-113.
- Lloyd, W.P.; Jahera, S.J.; Page, D.E. (1985) *Agency Cost and Dividend Payout Ratios*, Q J Bus Econ, 24, p. 19-29.
- Manos, R. (2002) *Dividend Policy and Agency Theory: Evidence on Indian Firms*, Working Paper, Institute for Development Policy and Management, University of Manchester.
- Miller, M.H.; Rock, K. (1985) *Dividend Policy under Asymmetric Information*, Journal of Finance, 40(4), 1985, p.1031-1051.
- Omran, M.; Pointon, J. (2004) *Dividend Policy, Trading Characteristics and Share Prices: Empirical evidence from Egyptian firms*, International Journal of Theoretical and Applied Finance, 7(2), p. 121-133.

- Pruit, S.W.; Gitman, L.W. (1991) *The Interactions between the Investments, Financing and Dividend Decisions of Major US Firms*, Finance Rev., 26, p. 409-330.
- Renneboog, L.; Trojanowski, G. (2006) *Control Structures and Payout Policy*, Managerial Finance 33, p. 43-64
- Rozeff, M.S. (1982) *Growth, Beta and Agency Costs as Determinants of Dividend Pay-Out Ratios*, Journal of Financial Research 5(3), p. 249-259.
- Travlos, N.; Trigeorgis, L.; Vafeas, N. (2001) *Shareholders Wealth Effect on Dividend Policy Changes in a Emerging Stock Market: the Case of Cyprus*, Multinational Finance Journal, 5(2), p. 87-112.
- Wang, M.; Gao, S.; Guo, G. (2002) *Dividend Policy of China's listed Companies*, Working Paper.
- www.bvb.ro
- www.kmarket.ro
- www.ktd.ro

PUBLIC DEBT SERVICE AND ITS IMPACT ON PUBLIC EXPENDITURES

ZUGRAVU Bogdan Gabriel

Ph. D. Assistant professor, Faculty of Economics and Business Administration, Department of Business Administration, Alexandru Ioan Cuza University of Iași, Iași, Romania, zugravu@uaic.ro

DOBRANSCHI Marian

Ph. D. Student, Doctoral School of Economics, Faculty of Economics and Business Administration, Alexandru Ioan Cuza University of Iași, Iași, Romania, marian.dobranschi@feaa.uaic.com

Abstract: *In this paper we analyze the main implications of public debt stock and public debt service on the structure of public expenditure in Romania. Based on economic structure of public expenditures and data for 1995-2010 we use a multiple regression analysis in order to emphasize the shifts of public expenditures as a response at variations in public debt service and its stock along with other macroeconomic indicators which bear a significant influence on public expenditures dynamic. We find that due to increased public indebtedness the composition of public expenditures composition suffers important shifts from productive to unproductive categories.*

Keywords: public indebtedness, public debt service, public expenditures, public expenditures shifts

JEL classification: H 50, H 62, H 63, H 68, H 69

1. Introduction

Our goal in this article is to perform an analysis of the implications that public indebtedness and public debt service public exerts on the composition of government expenditures.

The recent sovereign debt crisis has increased the controversies over the size of the public sector and the composition and financing of public expenditures. Even if the use of debt is nowadays a widespread choice in funding public expenditures, one must take into consideration, among many other factors, the cost of the debt and its impact on the revenue allocation.

Our research relates on Romania's economy for the 1990-2010 period, for which we analyze the public indebtedness and its impact on the composition of public expenditures. This period is very important, as Romania has passed a long and slow process of transition from centralized economy to a market-based one. Even if at the beginning of the transition process Romania had virtually no public debt, in the first years of transition the public debt have risen significantly. Moreover, due to specific constraints, external debt accounts for the greater share of public debt, with important implications on the debt service. Romania is facing now a hard budget constraint, the increased demand for public expenditures requiring increased fiscal revenues and debt financing.

In this study we analyze the main determinants of public debt and the implications and effects of public debt and its servicing obligations on the provision of public utilities. In order to do this double spectrum investigation, we focus on the implications and the shifts of public expenditures composition as a response to the variations in the stock of public debt and its service. Along with public debt burden we use a series of macroeconomic indicators which have a significant impact over the composition of public expenditures.

The study begins with a literature review on the impact of public debt public and on the implications of public debt service on the composition of public expenditures. Research methodology and discussion of results will follow in the next sections.

2. Literature review

The literature on the economic effects of public debt and its management is quite extensive. The debate over the use of debt for financing public expenditures is one of the most important issues in economic research and policy making, and has started with the classical view, according to which the public expenditures must be financed only through ordinary tax revenues. The golden rule of budget equilibrium was radically changed by J.M. Keynes, who proposed the use of debt financing deficits as the main instrument of expansionary fiscal policies, in order to boost aggregate demand and foster economic growth. The Keynesian policies have proved, at least for three decades, to be successful, promoting the involvement of public sector in the economy, not only as a ruler and protector of the law, but also as an

active agent which was called to stimulate and boost the economic development and growth on the long-run.

The theoretical literature on the relationship between public debt and economic growth tends to point to a negative relationship. Growth models augmented with public agents issuing debt to finance consumption or capital goods tend to exhibit a negative relationship between public debt and economic growth, particularly in a neoclassical setting.

Devarajan, Vinaya and Zou (1996) stressed out the relationships between the level of public expenditures and economic growth. The authors found that the future economic growth does not depend only on physical productivity of the different types of public expenditures but also on the initial size of public debt. As *Krugman* (1988) debates in his paper, the stock of public debt have reached the point of debt overhang when the expected value of potential future resources transfers is less than its debt. Particularly for developing countries the problem is more acute when inherited debt is larger than the present resource transfer that their creditors expect them to make in the future. First negative impact of debt overhang is the less incentive effect of countries to invest, mainly because an important amount of public resources is already absorbed by debt-servicing obligations as well as principal repayment on maturity. As a result, public indebtedness and the burden of public debt strongly affect the size and composition of public expenditures.

Leaving apart the core controversies over the use of public debt, and facing the widespread use of debt nowadays, we focus on the factors explaining accumulation of the debt stock and the implications of the debt service on the composition of public expenditures.

Reinhart and Rogoff (2010) showed that during recessions even in countries that have not experienced major financial crisis, debt raised in average with 20% (in real terms, 2007-2009 period). This general increase in public indebtedness stand in contrast with 2003-2006 period of public deleverages in many countries and owns to direct bail-out costs in some countries generated by the adoption of stimulus packages and the decline in government revenues, that have hit both advanced and emerging markets.

The management of accumulated debt stock and debt service is of crucial importance during crisis periods. In the context of economic recession with a slow and modest economic growth, and implicitly less tax revenues, opposed to continuously rising government spending due to pressures like unemployment, social protection and other welfare spending, budget deficit tend to increase above sustainable levels. As *Mitsui et al.* (2007) showed in his paper, the concern for sustainability of fiscal deficits and the sustainability of public debt, should be the key problem that should lead the public spending policy and the supply of public utilities.

The main questions that arise for public indebtedness in developing countries are: Can large deficits be sustained? How much public debt can a government afford in order to maintain the sustainability threshold?? Is there a possibility in the long-run that the public system will be paralyzed if public finance collapses under the weight of massive deficit? If the Ponzi Gamble is not respected, and the mechanism became unsustainable, the government will eventually go to default, in other words it will be unable to collect enough tax revenues to finance public spending and debt repayment?

Adam and Bevan (2005) found significant interaction effects between deficits and debt stocks, with high debt stocks exacerbating the adverse consequences of high deficits. In a simple theoretical model integrating the government budget constraint and debt financing, they found that an increase in productive government expenditure, financed out of a rise in the tax rate, is growth-enhancing only if the level of (domestic) public debt is sufficiently low.

The empirical evidence on the relationship between public debt service and economic growth is rather scarce and focused mainly on the external debt in developing countries. *Madhavi* (2004) studies the effects of external public debt burden on the composition of public spending using an panel sample of 47 countries for 1972-2001 period. The main findings of the paper are that high public debt levels are accompanied by high interest payments, fiscal austerity and changes in spending priorities that will require important shifts in budget shares of various spending categories. Particularly, the pattern of adjustment in spending mix, is influenced by the burden of debt, which invariably changes the composition of spending in favor of interest payments and displace the share of nonwage goods and service category.

Analyzing the relation between public debt and social expenditures, *Lora and Olivera* (2006) found that higher debt ratios reduce social expenditures, not just because of extra cost in interest payments, but also because they are associated with cuts in total expenditures that affect the social

sectors. Debt creates important shifts in social expenditures mainly because it reduces the room for further indebtedness.

Fosu (2008) analyze the impact of external debt-servicing upon the composition of government expenditures. The main findings are consistent with those of *Lora and Olivera* (2006), debt-servicing burden generates negative shifts of public expenditures, in particularly the social sectors of health and education and from public investment. The changes of public debt service are deleterious on social sector, with a strong mutation in the allocation of financial resources, where one standard increase in public debt burden is equal with a reduction of nearly one-third of share allocation to the social sector.

Signe Krogstrup (2002) have analyzed the effect of asymmetric debt service obligations on primary spending in EU countries, showing that high debt countries have smaller public sectors and higher taxes, particularly in the short-run, and low debt countries have a bigger public sector and low rate of taxation.

Greiner (2004) showed a certain decline of public investments as a result of rising public debt. Once the government decides to finance the majority of public spending with an important amount of borrowed resources and the stock of public debt reached a significant level, the resources left for other public spending categories are significantly lower.

A condition to limit associated costs of public debt is to increase the level of efficiency of public debt management and more important is to channel the borrowed resources to productive expenditures. If the borrowed financial resources are used efficiently and the interest rate is not high, only then foreign debt is likely to stimulate economic growth. But, if the funds are used to finance nonproductive public expenditures corroborated with high interest rate, the foreign public debt has a negative impact over growth and economic development.

The literature on the effects of public indebtedness on the composition of public expenditures in Romania is rather scarce. A few studies, like *Albu and Pelinescu* (2000), have analyzed the implications of public debt evolution and its sustainability on public budget public. The research is focused on the risk of excessive public indebtedness and its implications of default. *Altar et al.* (2008) performed a simulation under three different budgetary regimes, showing an inverse relation between the fraction of debt service financed by issuing new bonds and the long-run growth rate. Increasing the fraction of debt service financed by public debt with one percentage point leads to an average decrease in the long-run growth rate with 0.03 percentage points.

3. Data and methodology

In our paper we focus on two main subjects: first one is the determinants of public debt in Romania, in which we analyze the response of public debt evolution on its own cost and a set of macroeconomic variables, which comprise both internal and external factors. This would be useful in explaining the evolution of public debt under different social and economic factors.

In the second part of the analysis, we choose to regress public expenditures, expressed as shares in total public spending, mainly on the burden of public debt and its building stock. We add a short set of explanatory variables, which enable us to capture the shifts and mutation in the composition of public expenditures as a reaction at public indebtedness and its long-run effect upon the supply of public utilities and the economic growth.

Following the model of *Panizza et al.*(2011) we propose a model where we want to emphasize the sensitivity and the response of total public debt to the variations incurred into its own cost. Also, we use the method proposed by *Krogstrup* (2002) to calculate the cost of public debt, i.e. the debt burden, based on two different methods. The first one is DS1 (debt service) which measures the nominal interest payments on debt,

$$DS1 = r_t \times b_t$$

where b is the public debt ratio (public debt to GDP) and r is average nominal interest rate on public debt. The second method is DS2, similar to *Roubini and Sachs* (1989), and takes into consideration the budget constraint which is affected by the economic growth. So public debt burden can be measured as:

$$DS2 = (r_t - g_t) \times b_t$$

Where α_t represent the nominal growth of GDP. This method of measuring public debt service enable to show how public fiscal policy reacts to intertemporal budget constraints, taking into account the net interest rate evolution and the real rate of the economic growth.

Including monetary financing in the budget constraint would add a term depending on inflation and real growth, but it would not interact with the debt term and would hence not change the debt service measure coming out of this exercise.

Our dependent variable is public debt to GDP, in percents, to which we regress public debt PDET-1 (public debt lagged one period) and the two methods of measuring debt burden, DS1 and DS2 along with a set of control variables:

- EXTSERV – the external debt service to GDP, public and publicly guaranteed payable by the government;
- UNEMPL – the unemployment rate,
- GDP growth - the rate of growth in constant market prices,
- INFL –the inflation rate.

The equation is:

$$\text{Equation (1)}: PDET/GDP = \alpha_t + \beta_1(PDET/GDP - 1) + \beta_2(DS1) + \beta_3(DS2) + \beta_4(EXTSERV/GDP) + \beta_5(UNEMPL) + \beta_6(GDP_{growth}) + \beta_7(INFL) + \varepsilon_1$$

Next we focus on the analysis of the supply of public utilities, for which we substitute it with its value expression – the public expenditures. From this point of view we analyze the impact of the public debt and its service upon the composition of public expenditures, evaluating the main shifts in public expenditure structure as a response to public debt burden. We use as principal repressors public debt to GDP and public debt burden, introducing also a set of control variables, which are macroeconomic indicators, used as public expenditures determinants.

The method used is Two-Stage-Least-Squares (TSLS), the explanatory variable is the share of public expenditure in total public expenditures EXP_j , where $j=1, 2, 3... j$ stands for expenditure category.

For the equation where we test the impact of public debt and its service on economic types of public expenditures we have used the model of *Madhavi* (2004) and *Fosu* (2007), which includes public debt stock expressed as percent of GDP, along with primary deficit and public debt service both expressed as percent of GDP and the other explanatory variables. Our contribution is to extend the analysis of the impact of public debt service and its stock on public expenditures, compared to above mentioned studies which have analyzed only the impact of external public debt service.

We use the economic classification of public expenditures: I: Wages and employees compensations; II: Subsidies and other current transfers; III: Capital expenditures; IV: Social benefits and social transfers; V: Interest payments; VI: Other public expenditures

The control variables used in both regression equations are:

- PDET/GDP – gross consolidated public debt to GDP;
- PDET(-1)/GDP- previous period gross consolidated public debt to GDP;
- DS2/GDP – debt burden measure with government constraint effect;
- DEFPRIMAR/GDP – the primary deficit of public budget to GDP;
- GDP – the real growth rate of GDP;
- RATINFL(-1) – the previous period of inflation rate;
- UNEMPL – the rate of unemployment;
- CURACCDEF- current account deficit to GDP,
- TRADEOPEN – trade openness expressed as sum of Total Imports with Total Exports to GDP;

The equation is:

$$\text{Equation (2)}: EXP_{ecom}/GDP = \alpha_1 + \beta_1 PDET/GDP + \beta_2 PDET(-1)/GDP + \beta_3 DEFPRIMAR/GDP + \beta_4 DS2/GDP + \beta_5 GDP_{growth} + \beta_6 RATINFL(-1) + \beta_7 UNEMPL + \beta_8 CURACCDEF/GDP + \beta_9 PUBEXPN/GDP + \varepsilon_1$$

We use data for Romania for 1995-2010 period, from Eurostat and AMECO datasets we use the data for public debt and public debt service, and from the World Development Indicators database (World Bank) we use the data for the other macroeconomic indicators specified above.

4. Discussion of the results

The first equation that tests the implications of public debt service on public debt evolution is based on Two-Stage-Least-Squares method (TSLS). The results of our regression confirm in part the previous empirical analysis (see Table 1):

$$\text{Equation (3): } PDET/GDP = -19.833\alpha_1 + (-1.0169)\beta_1(PDET - 1) + (-0.1593)\beta_2(DS1) + 0.3272\beta_3(DS2)/GDP + 1.4914\beta_4(EXTSERV/GDP) + 0.1848\beta_5(UNEMPL) + (-0.3493)\beta_6(GDP\text{ growth}) + 1.6892\beta_7(INFL)$$

Table 1: Multiple regression estimation of Public debt stock as dependent variable

Dependent Variable: DATP2				
Method: Two-Stage Least Squares				
Date: 04/20/12 Time: 17:23				
Sample (adjusted): 1999 2010				
Included observations: 11 after adjustments				
Constant added to instrument list				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.85532	1.94	-1.81493	0.1672
PDET(-1)	-1.016599	0.291631	-3.485903	0.0399
DS1	-0.159397	1.804593	-0.088329	0.9352
DS2	0.827237	0.457322	1.808872	0.1682
EXTSERV	1.491403	2.440695	1.840215	0.163
UNEMPL	0.184809	0.774428	0.23864	0.8268
GDP	-0.349325	0.138974	-2.513597	0.0867
INFL(-1)	1.6892	1.405454	1.20189	0.3156
R-squared	0.957769	Mean dependent var	1.109091	
Adjusted R-squared	0.859231	S.D. dependent var	5.354149	
S.E. of regression	2.008831	Sum squared resid	12.1062	
F-statistic	9.719797	Durbin-Watson stat	1.085912	
Prob(F-statistic)	0.044226	Second-Stage SSR	12.1062	
J-statistic	1	Instrument rank	11	
Prob(J-statistic)	0.391625			

Table 1 shows that accumulated stock of public debt (“debt overhang” hypothesis) has the greater negative impact on current public indebtedness. On the other hand, public debt is affected positively by its own cost as well as by unemployment rate inflation rate. In other words, the debt service (DS2), unemployment and inflation have increased the level of public debt, with a continuous growing trend in the last 20 years in Romania. The differences between DS1 and DS2 are due to the fact that DS1 method to measure debt burden can be biased and might omit the implications of budget constraints in government’s decision to issue new debt. From data shown in Table 1 we can conclude that debt burden plays an important role in future public debt issuance, in which external debt accounts for considerable weight. The main reason we choose to introduce external debt service as an explanatory variable is because the structure of public debt in Romania is atypical, the level of external public debt being much higher than the level of internal one, as a consequence of an underdeveloped domestic capital market. Along these variables, public debt reacted positively to the inflation rate and to the unemployment. These two have increased the pressure on public budget, requiring more social protection spending and thus, indirectly, the need for financial resources. A lowering factor of public debt stock (and also for the need of additional financial resources) is GDP growth. The results show that at a 1% GDP growth the public debt tend to decrease with 3,45%. The process of public indebtedness in most developing countries, including Romania, it is based on a widely used strategy, that resumes itself to borrowing in order to cover cash gaps resulting from the difference between spending and payments. Also, large shares from government loans are used to finance the budget deficit and only modest ones are used to finance specific public investment projects. Moreover, a typical situation, particular for developing economies, is that governments tend to borrow more from external sources, in the absence of developed internal capital markets.

An underdeveloped capital market and also a precarious economic situation triggered by the transition to the market-based economy have forced the Romanian governments to issue foreign

debt, not only for financing budget deficits, but also to secure sustainable foreign exchange reserves, needed to cover the large trade deficits in the last 20 years. The use of external debt had significantly increased risk of default for the sovereign debt crisis, with important consequences on the cost of debt. Based on the results shown in Table 1, we can state that the major influence over the public debt stock comes from external public debt service. We can conclude also that debt structure matters. Looking at the structure of total public debt in Romania, we can observe the atypical nature of public debt, the greater share of financial resources being borrowed from international creditors. Another major impact over the process of public indebtedness in Romania is due to the total public debt service (DS2). The cost of public debt had significantly increased the public debt stock because of the excessive use of short-term loans at a higher interest rate than long term loans.

Using the economic classification of public expenditures, we have derived five regression equations, each type of public expenditures being regressed with the explanatory variables presented in the previous section. Based on Equation 2, we have tested each of the six categories of public expenditures using the economic classification. Thus, we analyzed the response of different categories of public expenditures on the variations of public debt stock and its service, along with the primary deficit, the GDP growth, the ratio of unemployment and inflation, the current account deficit and the evolution of total primary public expenditures (less interest payments). The results are shown in Table 2.

Table 2: Estimation using multiple regression equations for public expenditures, economic structure

Variable	Dependent Variable: WAGES AND COMPENSATIONS		Dependent Variable: SUBSIDIES		Dependent Variable: CAPITAL EXPENDITURES	
	Method: Two-Stage Least Squares		Method: Two-Stage Least Squares		Method: Two-Stage Least Squares	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	0.120799	0.199947	-0.09741	0.003125	-0.09973	0.099596
PDET	0.227084	0.134311	-0.07277	0.002119	-0.04436	0.076725
PDET(-1)	0.272436	0.101669	-0.07214	0.001731	-0.13896	0.050982
DEFPRIMAR	0.435801	0.251551	-0.17393	0.003732	-0.26875	0.100521
DS2	-0.20118	0.200717	-0.18132	0.002912	-1.65257	0.811486
GDP	0.129868	0.052927	-0.0386	0.000972	-0.05055	0.009168
RATINFL (-1)	-0.23662	0.266333	0.67767	0.004703	0.2327	0.109126
UNEMPL	0.358468	0.482293	-0.35988	0.007475	-0.09795	0.107014
CURACCDEF	-0.20875	0.108956	0.08515	0.001492	0.037222	0.023512
PUBEXPEN	0.036778	0.231449	0.014766	0.001735	0.050949	0.062055
R-squared	0.975157		0.999996		0.984924	
Adjusted R-squared	0.751567		0.999961		0.849238	
S.E. of regression	0.475662		0.006915		0.225246	
F-statistic	4.361371		28244.07		7.258857	
Prob(F-statistic)	0.356527		0.004618		0.280898	
J-statistic	1		1		1	
Prob(J-statistic)	0.317311		0.317311		0.317311	

Variable	Dependent Variable: SOCIAL TRANSFERS AND COMPENSATIONS		Dependent Variable: INTEREST PAYMENTS		Dependent Variable: OTHER EXPENDITURES	
	Method: Two-Stage Least Squares		Method: Two-Stage Least Squares		Method: Two-Stage Least Squares	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	-0.11116	0.448859	0.056396	0.000978	1.058825	0.004491
PDET	-0.14248	0.301514	0.027314	0.000819	-0.16149	0.003046
PDET(-1)	0.205996	0.228236	-0.00547	0.000496	-0.15982	0.002488
DEFPRIMAR	0.060456	0.564706	0.003305	0.00095	-0.51813	0.005364
DS2	-0.42338	0.450589	1.270915	0.007742	0.268054	0.004185
GDP	-0.07764	0.118815	0.002423	0.000116	-0.09541	0.001397
RATINFL (-1)	-0.5339	0.342782	-0.20178	0.003495	0.680494	0.006759
UNEMPL	0.294962	0.082696	0.002033	0.001022	-0.67431	0.010743
CURACCDEF	0.166727	0.244594	0.004322	0.000237	0.119881	0.002144

PUBEXPEN	0.011044	0.519578	-0.01419	0.000802	0.113945	0.002493
R-squared	0.910611		0.999996		0.999951	
Adjusted R-squared	0.806108		0.999961		0.999509	
S.E. of regression	1.067811		0.002146		0.009938	
F-statistic	1.131892		28788.67		2264.008	
Prob(F-statistic)	0.628208		0.004574		0.016309	
J-statistic	1		1		1	
Prob(J-statistic)	0.910611		0.317311		0.317311	

Our analysis shows that public debt service (DS2) has a negative impact over the evolution of four categories of public expenditures: Wages and Compensations, Subsidies, Capital Expenditures, Social Transfers and Compensations. Considerable negative impact is observed for the following public expenditures: Wages and Compensations, that decrease with 12,4% at an increase with 1% of public debt service and Capital expenditures, that decrease with 9,9% at a increase with 1% of public debt service. A lower negative impact is shown for Social Transfers and Compensations, that decrease only with 4,2 %. On the opposite, DS2 has increased considerably Interest Payments, with 12,7% for a 1% increase of debt service (DS2), denoting that Romania contracted public debt at high costs. Our results are partially consistent with those found by *Krogstrup* (2002) for EU countries, where the impact of debt service (DS1) is - 0,366 on total public expenditures. On the other hand, our findings confirm for Romania the results obtained by *Dreher et al.* (2007) for OECD countries: public expenditures with interest payments tend to grow as public debt accumulates and its cost increases. Other Expenditures increased with 2,6% at a 1% growth of public debt service. This correlation can be explained by looking at the composition of these expenditures (public debt fees, penalties and other public debt expenditures). The values for R and R-squared, average 0,95, show a high degree of determination by the explanatory variables.

Public debt stock (PDET) has a decreasing impact over four categories of public expenditures, excepting the Interest Payments and Wages and Compensation, that tend to increase as public debt accumulates. Public debt stock for year $t-1$ (PDET-1) has an increasing effect on Social Transfers and Compensations, which increased by 2% at a 1% increase of PDET-1.

On the other hand, the impact of primary deficit (DEFPRIMAR) is positive for Wages and Compensation, at a increase by 1% of the primary deficit, these expenditures increased with 4,35%. The result is significant, compared with the lower impact on Social Transfers (0,6%) and Interest Payments (0,03%). The primary deficit had decreased public expenditures with Subsidies, Capital Expenditures and Other Expenditures, the greater impact being observed Capital Expenditures (at reduction of 2,68%).

The economic growth in Romania (GDP) had a low impact on public expenditures evolution. Our analysis shows decreased expenditures with Subsidies (0,3%), Capital Expenditures (0,5%), Social Transfers and Compensations (0,7%) and Other Expenditures (0,9%). This is mainly due to the fact that economic growth and public sector development have reduced the need for economic support from the government, which can be observed on the lowering effect of public expenditures with Subsidies and Capital Expenditures. On the other side, the economic growth (GDP) has an increasing impact over the Wages and Compensations (1,2%) and the Interest payments (0,02%).

The rate of inflation (RATINFL) had an increasing impact on Subsidies (6,7%), Capital Expenditures (2,3%) and Other Expenditures (6,8), compared with a decreasing impact on Wages and Compensation (-2,3%), Social Transfers (-5,3%) and Interest Payments (-2%). The high level of inflation in Romania in the first decade after 1990 had increased public expenditures with Subsidies and Other expenditures. The inflation had lowered the public expenditures with capital expenditures, as a consequence of deleterious effect of high and unstable level of prices that decreased the returns from investments made by the state.

As data from table 2 shows, an increase of unemployment rate with 1% explain increased public expenditures with Wages and Compensation with 3,5%, Social Transfers with 2,94% and Interest Payments with 0,02%. On the other hand, unemployment rate had a decreasing impact on Subsidies (-3,5%), Capital Expenditures (-0,9%) and Other Expenditures (-6,7%).

Current account deficit in Romania had significantly lowered only public expenditures with Wages and Compensations (-2%), the impact for the rest of public expenditures being less significant. The results can be explained by the actions undertaken by governments to stimulate exports, in order to reduce trade deficits.

Primary Public Expenditures (less interest payments - PUBEXPEN) had increased with an average of 0,1% with Wages and Compensation, Subsidies, Social Transfers and Compensations, Other Expenditures and with 0,5% with Capital Expenditures compared with its lowering impact on Interest payments (-0,1%).

The analysis of the impact of public debt service and its stock on public expenditures enables us to conclude that the effects are widespread, and apart from positive results on economic growth, significant risks arise. The reallocation of available financial resources, with significant shifts between different types of public expenditures, might have a negative impact on the functioning of the public sector.

5. Conclusions

From the analysis on the response of public debt on its own cost and a set of macroeconomic variables, we can conclude that the debt service, unemployment and inflation have significantly increased the level of public debt, giving it a growing trend in the last 20 years in Romania. Also, the debt burden plays an important role in future public debt issuance, where external public debt service accounts for a sensible weight. The composition of public debt in Romania is atypical, the external public debt being much higher than the internal one, as a consequence of a underdeveloped domestic capital market. Public debt reacted positively to the inflation rate and to the unemployment, which have increased pressures on public budget, requiring more social protection spending and thus, indirectly, the need for financial resources. A lowering factor of public debt stock (and also the need for additional financial resources) is the growth of GDP, our results showing that a growth of 1 % of GDP public debt of Romania tend to decrease with 3,45%.

The analysis performed for the composition of public expenditures, showed strong negative impacts of public debt service and public debt to GDP ratio, as well as for other macroeconomic indicators. We may conclude that due to increased public indebtedness, corroborated with high levels of inflation and unemployment, public expenditures composition suffers important shifts from productive to unproductive categories. Because these expenditures represent a final consumption, they don't yield future income necessary to finance the public debt obligations. Compared with other studies, our results shows deepened effects for fragile economies, like the Romania's one, mainly because developing countries are more prone to crisis and the path to recovery is much more difficult than for high developed countries.

Even if debt financing of public expenditures might be used as an instrument to stimulate economic recovery and to boost growth, public indebtedness for unproductive spending, might lead, as our empirical analysis shows for Romania, to sensible shifts in public expenditures compositions. Therefore, public indebtedness might significantly reduce the available resources for financing important categories of expenditures like health, education, public investment and other public spending, which might have a positive effect on economic growth. We may accept that the size of government is a public choice, but its composition is open to policy and option debate. During current financial crisis, which affects economies across the world, characterized by liquidity shortening and serious government restraints in face of public debt crisis, the need for healthy public policies which promote efficient public spending is fundamental. Analyzing the main determinants of public expenditures, and splitting between productive and unproductive expenditures, a country can improve its economic performance only by changing the mix between the two categories of expenditure. Facing a hard budget constraint, a country should carefully choose the optimal composition of public expenditures, taking into consideration their contribution to economic growth.

Further research is needed to estimate the correlation between each type of public expenditures and economic growth, in order to provide useful tools for the decisions-making process on the composition of public expenditures.

6. Acknowledgments

This work was supported by the projects: "Post-Doctoral Studies in Economics: training program for elite researchers - SPODE" co-funded from the European Social Fund through the Development of Human Resources Operational Program 2007-2013, contract no. POSDRU/89/1.5/S/61755 and by the grant POSDRU/88/1.5/S/47646, named "Studii doctorale: portal spre o carieră de excelență în cercetare și societatea cunoașterii", cofinanced from the European Social Fund, within the Sectoral Operational

Programme Human Resources Development 2007-2013, the project implementation period being 36 months, from March 1, 2010, until February 28, 2013.

7. References

- Adam, C. S.; Bevan, D. L. (2005) *Fiscal deficits and growth in developing countries*, Journal of Public Economics, Vol. (4), pp. 571-597.
- Albu, L.; Pelinescu, E. (2000) *Sustainability of public debt: a theoretical and empirical investigation*, MPRA – Munich Personal Repec Archive, available on <http://mpa.ub.uni-muenchen.de/14364/> MPRA Paper No. 14364, posted 15 April 2009.
- Barro, R. (1979) *On determination of public debt, the journal of political economy*, University of Chicago, USA.
- Buchanan, J. M. (1958) *The Collected Works of :Public Principles of Public Debt*, by Liberty Fund, USA.
- Claessens, S.; Klingebiel, D.; Schmukler, L.S. (2008) *Government Bonds in Domestic and Foreign Currency: The Role of Institutional and Macroeconomic Factors*, Review Of International Economics, The World Bank, NW, Washington, DC, USA.
- Devarajan, S.; Vinaya, S.; Heng-fu, Z. (1998) *The composition of public expenditure and economic growth*, *Jjournal Of Monetary Economics*, Policy Research Department, The World Bank, Washington, DC, USA.
- Dreher, A.; Sturm, J.E.; Ursprung, W. H. (2008) *The impact of globalization on the composition of government expenditures: Evidence from panel data*, Public Choice, KOF Swiss Economic Institute, ETH Zurich, Weinbergstrasse 35, 8092 Zürich, Switzerland.
- Fosu, A. & K. (2009) *The External Debt-Servicing Constraint and Public-Expenditure Composition in Sub-Saharan Africa*, *Deputy Director, UN University World Institute for Development Economics Research, (UNU-WIDER), Helsinki, Finland.
- Gemmell, N.; Kneller, R.; Sanz, I. (2006) *Foreign investment, international trade and the size and structure of public expenditures*, School of Economics, University of Nottingham, University Park, Nottingham, NG7 2RD, UK, Faculty of Economics, Universidad Complutense de Madrid, Campus de Somosaguas, Madrid, Spain, Received 19 September 2006; revised form 4 June 2007; accepted 5 June 2007.
- Greiner, A. (2004) *An endogenous growth model with public capital and sustainable government debt*, Japanese Economic Review, available on www.papers.ssrn.com.
- Krugman, P. (1988) *Financing Vs. Forgiving A Debt Overhang*, Journal Of Development Economics North-Holland, National Bureau Of Economic Research, Cambridge, USA.
- Lora, E.; Olivera, M. (2007) *Public debt and social expenditure: Friends or foes?*, Research Department, Inter-American Development Bank, New York Avenue, NW, Washington D.C., USA.
- Madhavi, S. (2004) *Shifts in the Composition of Government Spending in Response to External Debt Burden*, World Development Vol. 32, No. 7, pp. 1139–1157, The University of Texas at San Antonio, USA.
- Mitsui, K.; Doi, T.; Ihori, T. (2007) *Sustainability, Debt Management and Public Debt Policy in Japan*, University of Chicago Press, Chicago, USA, available on <http://www.nber.org/books>.
- Modigliani, F. (1970) *Collected Papers of Franco Modigliani*, The MIT Press Cambridge, Massachusetts, London, England.
- Moisa, A.; Necula, C.; Bobeica, G. (2008) *Modeling The Economic Growth In Romania. The Influence Of Fiscal Regimes*, Journal for Economic Forecasting, Institute for Economic Forecasting, vol. 5(4), pages 146-160, December
- Panizza, U.; Forslund, K.; Lima, L. (2006) *The determinants of the composition of public debt in developing and emerging market countries*, Polis Working Papers Universita' Del Piemonte Orientale "Amedeo Avogadro" Alessandria Periodico Mensile On-Line "Polis Working Papers".
- Panizza, U. (2008) *Domestic and external public debt in developing countries*, United Nations conference on trade and development, nr. 188.

- Reinhart, M. & C.; Rogoff, S. & K. (2010) *Growth in a Time of Debt*, American Economic Review Papers and Proceedings, University of Maryland. NBER and CEPR, Harvard University and NBER University of Maryland, College Park, Maryland, USA.
- Roubini, N.; Sachs, D. & J. (1989) *Political And Economic Determinants of Budget Deficits in The Industrial Democracies*, Nber And Harvard University, Cambridge, USA.
- Signe, K. (2002) *Public debt asymetries: The effect on taxes and spending in European Union*, European Central Bank, ECB Working Papers.
- Sosin, K.; Shuanglin, L. (2007) *Foreign debt and economic growth*, Department of Economics, University of Nebraska at Omaha, Omaha, USA.
- Eurostat Regional Yearbook (2010), Eurostat Database, available on www.eu/epp.eurostat.ec.europa.eu.
- Annual Reports of National Bank of Romania, NBR, available on www.bnr.ro/publicatii-periodice.
- Annual Reports of INSSE, INSSE, available on www.insse.ro/cms/rw/pages.
- WDI – World Development Indicators, World Bank, available on data.worldbank.org.
- AMECO, Eurostat Database, available on www.ec.europa.eu/economy_finance/ameco.

PUBLIC EXPENDITURES IMPACT ON ECONOMIC GROWTH: EVIDENCES FOR ROMANIA

ZUGRAVU Bogdan-Gabriel

Ph. D. Assistant professor, Faculty of Economics and Business Administration /Department of Business Administration, Alexandru Ioan Cuza University, Iași, Romania, zugravu@uaic.ro

SAVA Anca-Ștefania

Ph. D. Student, Faculty of Economics and Business Administration /Doctoral School of Economics, Alexandru Ioan Cuza University, Iași, Romania, sava.anca@yahoo.com

Abstract: *The aim of this paper is to discuss the Romanian public expenditures impact on economic growth from both a theoretical and an empirical point of view. Firstly, we present a brief literature review on the effects of public expenditures policy to economic growth. The second section continues with the methodology that we used in order to estimate the impact of public expenditures, according to their economic structure, to economic growth for the period 1995-2011. According to the results obtained, for interests and gross capital formation was found a negative correlation with gross domestic product, while the other categories of expenditures contributed in different proportions to economic growth.*

Key words: public expenditures, economic growth, Romania

JEL classification: H 50, O 40, O 52

1. Introduction

Our study starts from the need to take decisions on the allocation of financial public resources between the various categories of expenditure on criteria of rationality, on the conditions under which the current economic and social context exerts pressures on sizing and structuring of public expenditure.

Under the conditions in which most of the countries are concerned with the strictly control of budgetary deficit, reallocation of available financial resources between the various categories of expenditure appears to be a necessary objective. In our opinion, this reallocation must be based on rational criteria, based on knowing the effectiveness and the impact that each category of public expense exerts on the production potential of the country.

In this context, estimation of causality and intensity of these correlations between public expenditure and economic growth is able to provide a basis for rational decisions regarding the allocation of financial public resources, far exceeding the traditional assumptions according to which certain categories of expenses are considered a-priori with positive effects, while others are considered non-productive. Romania's experience in the recent period is relevant in this case, decision makers often choosing to increase certain categories of expenses, such as subsidies or public investment, to the detriment of others, as well as wages and salaries or social transfers. In a similar manner are often treated the functional public expenditure categories, considering that the allocation of resources in favor of expenses such as those for infrastructure, education or health care no longer require rationality of their impact.

Although correlations between public expenditure and economic growth are the subject of numerous studies, it is important to specify that most of the studies carried out up until now have focused on analysis of the impact of public expenditure in accordance with their functional structure. In addition, there is extensive analysis on this topic for Romania.

The contribution which brings our study consists in investigating the correlations between economic growth and economic structure of public expenditure, for the case of Romania. We believe that this analysis is useful through the implications for fiscal policy, the findings may be prove to be useful for more rational allocation of public resources.

Section 2 of our study provides a survey of economic literature on this issue, while the next sections (section 3 and section 4) present an overview of the applied empirical methodology, the data used and a discussion of the results obtained. Section 5 contains the concluding remarks and we also provide recommendations for budgetary policy.

2. Literature review

The purpose of this literature review is to present a selection of studies which highlight the correlations found between public expenditures categories and economic growth.

The literature on the relationships between public expenditures and economic growth it's quite vast and can be divided in two main streams: one which supports the Keynesian theory of positive impact of the public expenditures on economic growth and the other that supports the opposite, that public expenditures negatively impact on economic growth.

Apart from the theoretical debates over the impact of public spending on economic growth, there are numerous empirical studies which have tried to estimate the sign and the intensity of the correlations between growth and public expenditures. This empirical literature varies in terms of data sets and econometric techniques, and often produces the same conflicting results as theoretical debates. Even if in more recent studies it appears some convergence in terms of the significance of public spending on growth, the results still differs from country to country, or from sample to sample, and appears to be determined by many different factors.

For the first stream are relevant the earlier works of Ram (1986), Holmes & Hutton (1990) and Aschauer (1989) which have found a strong positive relationship between government expenditures and economic growth. On the other side, Grier and Tullock (1989), analyzing the relationships between government size, as percentage to GDP, and economic growth, on a sample of 113 countries, found a negative impact on economic growth. Similar results were obtained by Barro (1990), Seymour and Oral (1997), Cashin (1995). The results of the study conducted by Folster and Henrekson (2001) point to a robust negative relationship between government expenditure and growth on a sample of rich countries covering the 1970-1995 period of time: an increase of the expenditure ratio by 10 percentage points is associated with a decrease in the growth rate on the order to 0.7-0.8 percentage points (Folster and Henrekson, 2001, p.1516).

Most of the conclusions regarding the impact of public expenditures on economic growth are based on studies on a set of developed countries or on a mixture of developed and developing countries. Only a few studies were conducted on samples including only developing countries, Bose et al. (2007) and Moreno-Dodson (2008), being relevant works for this matter. Most studies focus on the relationships between the overall size of the public sector and economic growth, and only a few analyze the relationships between expenditure types and economic growth. For example, Moreno-Dodson (2008) shows, for a group of fast-developing countries, that the link between total public spending and growth is overall positive with some types of public spending being particularly significant in affecting growth. For this group of countries, unproductive components of public expenditure are less significant-or even have a negative impact on growth-while the productive component of public spending is statistically significantly.

Some studies have reached mixed results, growth being strongly affected only by certain types of public expenditure. Public infrastructure, communication and information systems, government-funded education and research and development are the most often cited examples of publicly provided goods which contribute positively to aggregate production. Many studies split public expenditures in productive and unproductive expenditures. Productive spending includes expenditures on infrastructure, the law, education and training, while non-productive spending includes expenditures on national defence, national parks, social programs, etc. (Carboni and Medda, 2011).

Devarajan et al. (1996), using data from 43 developing countries over 20 years, found a positive relationship between current government expenditure and economic growth, but a negative relationship between capital expenditure and per-capita growth was also observed. In the same study, they found that spending on health, transport and communication have positive impacts, whereas spending on education and defence did not have a positive impact. Ram (1986) found government expenditure to have significant positive externality effects on growth, particularly in developing countries, but total government spending had a negative effect on growth. Lin (1994) found that non-productive spending had almost no effect in growth in the developed countries, but a positive impact in less-developed countries. Grossman (1990), using a sample consisting of 48 developed and developing countries, shows that government spending has both positive and negative impacts on growth; the positive one works through higher productivity and the negative one is caused by inefficient provision and distortion effects of taxation.

Most of the above mentioned studies analyze the impact of the composition of public expenditures using the functional structure of expenditures. The relationships between economic types of public expenditures, i.e. wages and compensations, subsidies, capital expenditures, social transfers etc., and economic growth are only partially analysed. As far as we know, there are no studies focused only on the impact of economic types of public expenditures.

3. Methodology

Our empirical analysis uses a linear multiple regression which tests whether the specified components of government expenditure, according to their economic structure are associated with higher economic growth.

Data for this analysis are annual and range from 1995 to 2011 for Romania, chosen mainly on the basis of data availability. All the data for gross domestic product and the economic structure of expenditures are drawn from Eurostat (2012), for the period 1995-2010 and for 2011 we used the data provided by the Romania's Ministry of Public Finance (consolidated budgetary expenditures for 2011). Our key explanatory variables are the impact of the specified components of public expenditures on economic growth for Romania.

The equation is the following:

$$\text{Equation (1): } c_gdp = C(1) + C(2)*c_cs + C(3)*c_ic + C(4)*c_gkf + C(5)*c_sb + C(6)*c_other + C(7)*c_int + C(8)*c_transf$$

The dependent variable is the gross domestic product at current prices (in millions RON, c_gdp), and the independent variables are: the government categories of public expenditures at current prices (in millions RON): compensation of employees, payable (c_cs), intermediate consumption (c_ic), subsidies (c_sb), social benefits other than social transfers in kind, payable (c_transf), interest payable (c_int), gross capital formation (c_gkf) and other expenditures (c_other).

4. Discussion of results

Table 1 provides the results of the growth model with the disaggregate expenditures. For the variables of the equation there have been applied unit root tests for all the series. Also, I have applied the Hodrick-Prescott Filter for each series to eliminate the trend component and for all the series have been applied tests which indicated the absence of autocorrelation and autoregressive-conditional heteroscedasticity.

The statistical program used is Eviews 7 and the method chosen for the linear regression equation is Least Squares.

Table1: Estimation of growth model with disaggregated expenditure (according the economic structure)

Dependent Variable: C GDP				
Method: Least Squares				
Date: 04/18/12 Time: 20:19				
Sample: 1995 2011				
Included observations: 17				
White heteroskedasticity-consistent standard errors & covariance				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.90E-09	1324.797	-1.43E-12	1.0000
C CS	3.729691	1.067129	3.495070	0.0068
C IC	3.452924	2.063905	1.673006	0.1287
C GKF	-3.568124	1.048506	-3.403057	0.0078
C SB	1.563092	4.041240	0.386785	0.7079
C OTHER	3.896600	1.852186	2.103785	0.0647
C INT	-13.85021	3.584601	-3.863809	0.0038
C TRANSF	2.922536	0.352225	8.297363	0.0000
R-squared	0.977684	Mean dependent var		-3.93E-09
Adjusted R-squared	0.960326	S.D. dependent var		27423.46

S.E. of regression	5462.280	Akaike info criterion	20.35431
Sum squared resid	2.69E+08	Schwarz criterion	20.74641
Log likelihood	-165.0116	Hannan-Quinn criter.	20.39328
F-statistic	56.32705	Durbin-Watson stat	2.559305
Prob(F-statistic)	0.000001		

Source: own calculations

Table 1 provides the regression results for the disaggregated public spending variables. Looking at the R-Squared indicator, we can say that the model explains approximately 97 percent of the variations in real output, while the remaining three percent can be explained by unknown or inherent variability. According to these results, excepting interests and gross capital formation, all categories of public spending contributed to economic growth in different proportions over the period 1995-2011. The regression equation is the following:

$$\text{Equation (2): } C_GDP = 3.72 * C_CS + 3.45 * C_IC - 3.56 * C_GKF + 1.56 * C_SB + 3.89 * C_OTHER - 13.85 * C_INT + 2.92 * C_TRANSF - 1.90.$$

In the transition period to market economy current government expenditures prevailed, their shares in total expenditure were of over 80%, while the evolution of capital expenditure has registered a significant decrease since 1995, from 4.2% of GDP to 2.3% of GDP in 1999. The share of current expenditures was a similar one for the period 2000-2011, while the evolution of capital expenditures was an oscillating one, it registered increases to 6.6% of GDP in 2008, while for 2011 consolidated budgetary executions registered a decrease to 4.2% of GDP in 2011.

The results of the regression equation show a negative correlation (-3.56%) between gross capital formation and gross domestic product, a result confirmed by the World competitiveness report (Schwab, K., 2011, p. 412), which assigned a low value for the indicator „quality of infrastructure”, of 2.3 weighted average for the period 2010-2011 (1-extremely underdeveloped, 7-extensive and efficient by international standards). Romania ranked 139 in a sample of 142 countries and also the last rank at European level, although it had in the period 1995-2010 the largest capital allocations among the European Union countries (both as a percentage of gross domestic product and as a percentage of budget revenues, measured using ESA 95 standards).

Subsidies and social transfers contributed to economic growth in small proportions (1.56% and 2.92%), being in accordance with the literature on automatic stabilizers, according to which subsidies, unemployment insurance and social benefits work as a built-in stabilizer for the economy, especially in times of recession.

For the period between 1995 and 2011, the group of public expenditure with the highest specific weight in total public expenditure was the one of social transfers, characterized by an increasing dynamics, from approximately 30% of total public expenditure in 1995 to 46.33% in 2011. Their share in GDP has been around 10.2% of the GDP in 1995 and increased to 17.4% of GDP in 2011.

According to Eurostat (2012), during 1995-2011 the amount of subsidies and grants recorded a decrease from 10.08% of the total expenditures budget in 1995, to 4.03% in 1999, afterwards continued their reduction to 1.39% in 2010, and in 2011 increasing to 3.11% in 2011. As weighted in GDP, the group of subsidies decreased significantly, from 3.4% of GDP in 1995 to 0.60% in 2010 and registered an increase to 1.2% of GDP in 2011.

Analyzing the reports of the Competition Council (2007, 2009 and 2011), subsidies, grants, allowances, subsidized interest represented the main forms of financial instruments granted by the state for the period 2002-2009, with an increasing trend, from 22.45% of the total national state aid in 2002 to 93.05 % in 2009. These forms of budgetary expenditure have been granted by suppliers of state aid to the economic operators who carried out their activities in the field of research, development and innovation, culture and preservation of the cultural patrimony, for supporting the production of movies (for the period 2006-2009), but also for the National Coal Company Petrosani, with an activity in the sector of coal extraction.

Positive has also been the relationship between gross domestic product and another two groups of expenditures: intermediate consumption and payable compensation of employees. For intermediate consumption the trend has been an upward one for the period 1995-1999, from 17.81% of total public expenditure (6.1% of GDP) in 1995 to 24.45% in 1999 (5.8% of GDP), followed by a change in their dynamics for the period 2000-2011, from 24.48% of total public expenditure (9.4% of GDP) in 1995 to 15.46% in 2011 (5.8% of GDP).

According to Eurostat (2012) and to Romania's execution of consolidated general budget for 2011, payable compensation of employees had percentages of 20% of total public expenditure over the whole period, and as a percentage of gross domestic product have recorded increases from 6.6% (1995), to 10.9% (2009), while in the last two years analyzed were reduced to 7% of GDP (as a result of the measures taken in 2010 by the public authorities to reduce with 25% the wages of state employees), in accordance with the level established by the fiscal budgetary strategy for 2011-2013 and fiscal budgetary responsibility law no 69/2010. The policy of uniformity in reducing public expenditures, without any differentiation such as taking into account the activity sector and the performance of public institutions is debatable.

The relationship between interests and gross domestic product has been a negative one (-13.85%), an increase with 1 percentage points in interests reduces gross domestic product with 13.85%. These public expenditure dynamics has been particularly alert in the period 1995-2011, have increased from 4.61% of total public expenditure in 1995 (1.6% of GDP), to 12.88% in 1999 (5% of GDP), with much higher public expenditure for education and health, which are considered national priority. Increasing the degree of state indebtedness has driven an increase of public debt burden, in the form of interest and commissions. For the period 2000-2011 has registered a decrease of their share in total public expenditure (from 10.23% in 2000 to 4.32 % in 2011) and in gross domestic product (from 3.9% in 2000 to 1.6% in 2011).

On the basis of the analysis performed we believe that it is necessary on long-term and also as a solution to the current economic and financial crisis a reconsideration of the level of public expenditure within the meaning of rationalizing, focusing on the effectiveness of budgetary allocations.

Rationalization of public expenditures cannot be seen as a mandatory requirement for reducing the volume of public expenditures, but rather it has to rely on the rationality of viable options, concerning not only their dimension and structure, but also their outcomes. Under these circumstances, the assessment of public actions efficiency becomes an essential requirement for allocation of public funds based on rationality criteria.

5. Conclusions

The development in the theory of endogenous growth stimulated empirical works on the determinants of economic growth. In order to find an answer to the topic of research proposed, we started by reviewing the significant papers which analyzed the link between public expenditures (according to their functional or economic structure) and economic growth.

Taking into account the existent literature, there are papers which support the Keynesian theory of positive impact of the public expenditures on economic growth and the other that supports the opposite that public expenditures negatively impact on economic growth.

Public expenditures can be seen as a good solution for funding difficulties and a source of further investments, thus contributing to long term economic growth. According to Keynes, in periods of economic decline it is recommended to employ higher public spending, given the multiplier effect that public final consumption and investment demand entails.

The recent economic and financial crisis has shown the recrudescence of the Keynesian paradigm, in which the government intervention should be seen as a way to stimulate consumption, global demand and thus the economic recovery. Thus, the governments tried, through budgetary fiscal stimulus and monetary policy to alleviate the economic decline.

As the relationships between the economic types of public expenditures (subsidies, investment expenditures, compensation of employees, social transfers, interests, intermediate consumption and other expenditures) and economic growth are only partially analysed by the existent papers, this study aims at analyzing the impact between these variables in a model of linear regression for Romania, using the time series 1995-2011.

Our results found a positive and significant value for the coefficient of determination (R-Squared) between gross domestic product and the categories of public expenditures, which may be interpreted that approximately ninety percent of the variation in gross domestic product can be explained by the explanatory variables. Public expenditures which had a positive correlation with economic growth for this period were subsidies, social transfers, intermediate consumption, compensation of employees and other expenditures, while for interests payable and gross capital formation the relationship was a negative one.

We believe that this analysis is useful through the implications for fiscal policy, the findings may be prove to be useful for more rational allocation of public resources. Also, for Romania, we believe that are required reductions of unproductive expenditures, such as compensation of employees and intermediate consumption and increases of capital expenditures, subsidies and of those expenditures (intellectual investments) which support social objectives, investments in strategic areas, which are an exit from the economic crisis and also have a contribution to increase production capacity of the economy.

6. Acknowledgments

This work was supported by the projects: “*Post-Doctoral Studies in Economics: training program for elite researchers - SPODE*” co-funded from the European Social Fund through the Development of Human Resources Operational Program 2007-2013, contract no. POSDRU/89/1.5/S/61755 and by the grant POSDRU/88/1.5/S/47646, European Social Fund in Romania, under the responsibility of the Managing Authority for the Sectoral Operational Programme for Human Resources Development 2007-2013.

7. References

- Aschauer, D. A. (1989) Is Public Expenditure Productive?, *Journal of Monetary Economics*, 23, p.177-200.
- Barro, R. J. (1990) Government Spending in a Simple Model of Endogenous Growth, *Journal of Political Economy*, 98 (1), s103-s!25.
- Barro, R.J. and Martin, X. S. (1990) Public finance in models of economic growth, *National Bureau of Economic Research*, Working paper 3362, Cambridge, p.1-39.
- Bose, N., Haque M.E., Osborn, D. R. (2007) Public Expenditure and Economic Growth: A disaggregated analysis for developing countries,” *The Manchester School*, 75, p.533-56.
- Carboni, O. A.; Medda, G. (2011) Size and Composition of Public Spending in a Neoclassical Growth Model, *Metroeconomica*, Vol. 62, Issue 1, p. 150-170.
- Codirlaşu, A. (2007) Modulul: Econometrie aplicată utilizând Eviews 5.1, Academia de Studii Economice, econometriemsbank2007.pdf.
- Consiliul Concurenței (2007) *Raportul privind ajutoarele de stat acordate în România în perioada 2004-2006*.
- Consiliul Concurenței (2009) *Raportul privind ajutoarele de stat acordate în România în perioada 2005-2007*.
- Consiliul Concurenței (2011) *Raportul privind ajutoarele de stat acordate în România în perioada 2007-2009*.
- Devarajan, S., P. Swaroop & H. Zou (1996), The Composition of Public Expenditure and Economic Growth, *Journal of Monetary Economics*, 37, p.313-344.
- European Commission. [Retrieved] March 20, 2012, *Eurostat database* [<http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home%5d>].
- Folster, S., Henrekson, M. (2001) Growth effects of government expenditure and taxation in rich countries, *European Economic Review*, Vol.45, No.8, p.1501-1520.
- Grier, K. B. & G. Tullock (1989) An Empirical Analysis of Cross-National Economic Growth, 1951-1980, *Journal of Monetary Economics*, 24, p.259-276.
- Grossman, Philip J. (1988) Government and economic growth: A nonlinear relationship, *Public Choice*, vol. 56(2), p.193-200.
- Holms, J. M.; P. A. Hutton (1990) On the Causal Relationship Between Government Expenditures and National Income, *Review of Economics and Statistics*, 72, p.87-95.
- Legea responsabilității fiscal-bugetare nr.69/2010 (2010) *The Official Journal of Romania*, part I, no.252.
- Lin, S. (1994) Government spending and economic growth, *Applied Economics*, Volume 26.
- Moreno-Dodson, Blanca (2008) Assessing the Impact of Public Spending on Growth: An Empirical Analysis for seven fast Growing Countries, *World Bank Policy Research Working Paper* No. 4663.
- Ram, R. (1986) Government Size and Economic Growth: A New Framework and Some Evidence from Cross-Section and Time Series, *American Economic Review*, 76, p.191-203.

- Romania's Ministry of Public Finance. [Retrieved] March 29, 2012, Consolidated budgetary executions [<http://www.mfinante.ro/execbug.html?pagina=buletin>].
- Schwab, K. (2011) *The Global Competitiveness Report 2011-2012*, World Economic Forum, Geneva.
- Seymour, D; Oral, W. (1997) The impact of Government Expenditure on Economic Growth in the OECS; A Disaggregated approach, World Bank Research, *World Bank* (1994): Infrastructure for Development World Development Report, Oxford University Press.
- The Romanian Government, Strategia fiscal-bugetară pentru anul 2011-2013.

TABLE OF CONTENTS

CONSIDERATIONS REGARDING THE PATRIMONIAL INVENTORY IN THE SPIRIT OF EUROPEAN ACCOUNTING REGULATIONS	3
AVRAM VERONEL.....	3
ȚOGOE GRETI DANIELA.....	3
FINANCIAL PERFORMANCE INDICATORS FOR EVALUATION OF LISTED COMPANIES 8	8
BALTEȘ NICOLAE	8
CIUHUREANU ALINA TEODORA	8
THE FINANCIAL IMPLICATIONS OF IMPLEMENTING THE NATIONAL REFORM PROGRAM IN ROMANIA	16
BALTEȘ NICOLAE	16
ISPAS ROXANA.....	16
RETAIL BANKING TRANZACTION INNOVATION	21
BANACU CRISTIAN.....	21
GRUDNICKI BOGDAN.....	21
FINANCIAL PERFORMANCE OF BANKS ANALYSIS	26
BĂTRÂNCEA IOAN	26
BĂTRÂNCEA MARIA	26
MOSCVICIOV ANDREI.....	26
THE CONNECTION BETWEEN THE LUMP-SUM TAX AND THE SMES' TURNOVER IN ROMANIA.....	32
BECA MARUȘA.....	32
ȘERBAN ELENA CLAUDIA	32
THE RATING SYSTEM LICOS BUDGETARY INSTITUTIONS	40
BECHIȘ LIVIU.....	40
THE PRESENT SITUATION OF THE ABSORPTION OF THE STRUCTURAL AND COHESION FUNDS IN ROMANIA: THE CONSEQUENCES OF INTERRUPTION OF PAYMENTS THROUGH SECTORAL OPERATIONAL PROGRAM HUMAN RESOURCE DEVELOPMENT.....	43
BERICA CORINA	43
COCRIȘ VASILE.....	43
THE BUDGET OF THE PUBLIC INSTITUTION – A PROGRAMMING AND EXECUTION INSTRUMENT FOR INCOMES AND EXPENSES.....	52
BOBEȘ FLORINA-MARIA.....	52
THE IMPLEMENTATION OF RISK MANAGEMENT SYSTEMS IN ROMANIAN PUBLIC INSTITUTIONS.....	58
BOGHEAN FLORIN	58
HLACIUC ELENA	58
BOGHEAN CARMEN.....	58
ACCOUNTING AND AUDIT IN TIMES OF CRISIS.....	65
BOIA MĂDĂLINA-IOANA.....	65
A FAN CHART FOR INFLATION RATE FORECASTS IN ROMANIA	71
BRATU MIHAELA	71
CRISIS AND FINANCIAL REGULATION	81
BRATU RENATE DOINA	81
ȚĂRAN – MOROȘAN ADRIAN	81
WHICH ARE THE FUTURE REVENUES OF THE EUROPEAN UNION SINCE 2014?.....	87
BUNESCU LILIANA.....	87
COMANICIU CARMEN	87
APPLICATION OF THE PRINCIPAL COMPONENTS ANALYSIS TECHNIQUE ON ROMANIAN INSURANCE MARKET	99
BURCĂ ANA-MARIA.....	99
ARMEANU DAN	99
A SURVEY OF THE STRUCTURAL APPROACH IN CREDIT RISK MODELLING.....	107
CĂLIN ADRIAN CANTEMIR	107
POPOVICI OANA CRISTINA	107
EFFECTS OF CENTRALIZATION IN THE POST-TRADING INFRASTRUCTURE OF OTC DERIVATIVES	116

CALISTRU ROXANA ANGELA	116
FROM FISCAL SOVEREIGNTY TO A GOOD FISCAL GOVERNANCE IN THE EUROPEAN UNION.....	125
CHILAREZ DĂNUȚ	125
ENE GEORGE SEBASTIAN.....	125
FIABILITY OF PIVOT POINT INDICATOR.....	135
CIUDIN ADRIAN	135
VASIU DIANA.....	135
THE BALANCE SHEET – INFORMATION SYSTEM IN THE FINANCIAL DIAGNOSIS.....	141
CIUHUREANU ALINA TEODORA	141
INTERNAL AND EXTERNAL AUDITORS AS A TEAM-WORK.....	150
CONSTANTIN NICOLAE VASILE.....	150
SUSMANSCHI GEORGIANA	150
THE BITCOIN ECONOMY, AN ANTI - CRISIS REMEDY?	156
COZMEI CĂTĂLINA.....	156
CALOIAN FLORENTIN.....	156
QUALITY IN HIGHER EDUCATION: FROM WORDS TO REALITY.....	164
CREȚAN GEORGIANA CAMELIA	164
CĂMPEANU EMILIA MIOARA	164
CHIRILĂ VIORICA	164
TO WHAT EXTENT THE DIMENSION OF THE FACULTATIVE PENSIONS FUNDS IS INFLUENCED BY THE PLACEMENTS OF THEIR ASSETS? STATISTICAL STUDY IN ROMANIA.....	173
CRISTEA MIRELA	173
MARCU NICU.....	173
SIMION MIRCEA LAURENȚIU.....	173
THE LEASE AGREEMENT – A METHOD TO FINANCE THE PUBLIC SECTOR INVESTMENTS.....	184
CRIVEANU MARIA	184
STUDY ON LIQUIDITY IN ROMANIAN COMPANIES	190
CSEGEDI SANDOR	190
BĂTRÂNCEA IOAN	190
TODEA ANGELA.....	190
A STATISTICAL STUDY ON THE IT ROMANIAN COMPANIES PERFORMANCE	195
CSEGEDI SANDOR	195
BĂTRÂNCEA LARISSA-MARGARETA	195
MOSCVICIOV ANDREI.....	195
ABSENTEEISM AND THE IMPACT OF COST IN HOSPITALS	199
DĂUȘ GABRIELA LOREDANA	199
SCIENCE AND ETHICS – PUBLIC USE OF ACCOUNTING EXPERTISE IN CONTEXT OF THE FINANCIAL CRISIS.....	207
DOBRE ELENA	207
PETRASCU DANIELA.....	207
CRISIS TRANSMISSION AND EFFECTS ON FINANCIAL SYSTEM.EVIDENCE FROM ROMANIA.....	210
DORNEAN ADINA	210
FÎRȚESCU BOGDAN-NARCIS.....	210
THE FINANCIAL RISKS OF THE ENTITY.....	219
DUCU CORINA.....	219
SOVEREIGN CREDIT RATING AND STOCK MARKET CAPITALIZATION IN CENTRAL AND EASTERN EUROPE, 1996 - 2010	224
DUDIAN MONICA	224
POPA RALUCA ANDREEA	224
THE IMPORTANCE OF INVESTMENTS IN EARLY EDUCATION	232
DUMITRESCU ALEXANDRA	232
CONSTANTINESCU ADRIAN.....	232
TACHE ILEANA	232
VIEWS REGARDING THE ORGANIZATION OF THE ACTIVITIES RELATED TO THE PREVENTION AND COMBAT AGAINST MONEY LAUNDERING.....	238

DUMITRESCU SERJU	238
AVRAM MARIOARA	238
GLOBALIZATION OF FINANCIAL AND AUDITING SERVICES- FINANCIAL IMPLICATIONS FOR ROMANIAN COMPANIES	245
DUȚESCU ADRIANA	245
SAHLIAN DANIELA	245
THE SIGNIFICANCE OF ETHICAL CONDUCT FOR THE ACCOUNTING PROFESSION ...	254
DUȚESCU MIHAELA	254
SUSTAINABLE DEVELOPMENT IN THE PRESENCE OF FOREIGN INVESTMENT. OMV PETROM CRITICAL ANALYSIS	257
ENE SEBASTIAN GEORGE	257
IONECI MIHAELA	257
CHILAREZ DĂNUȚ	257
INSURANCE SYSTEM AND EUROPEAN INSURANCE MARKET DURING CRISIS – EVIDENCE FROM SOME POST-COMUNIST COUNTRIES.....	266
FÎRȚESCU BOGDAN-NARCIS	266
THE TESTING OF THE CONNECTION'S INTENSITY AND OF THE DEPENDENCE SIGNIFICANCE BETWEEN THE ALLOCATIONS VALUE, THE SOLICITED VALUE THROUGH THE SUBMITTED PROJECTS, THE VALUE OF THE APPROVED PROJECTS, THE VALUES OF THE CONTRACTED ONES AND THE ABSORPTION CAPACITY IN THE OPERATIONAL PROGRAMME ADMINISTRATIVE CAPACITY DEVELOPMENT.....	276
FLORESCU DANIELA	276
ECONOMIC CRISIS – UNDERSTANDING THE CAUSES TO ANALYSE POSSIBLE SOLUTIONS.....	283
GAVRILETEA MARIUS DAN	283
MOGA AURA CARMEN	283
THE INTENSITY OF LIBERALIZATION.....	290
GHERMAN MIRCEA-CRISTIAN	290
CIUPAC-ULICI MARIA-LENUȚA	290
COMAN ALEXANDRU	290
ANALYSIS OF LOANS TO HOUSEHOLDS FOR HOUSE PURCHASE IN ROMANIA	297
GIBESCU OCTAVIA MARIA	297
ASPECTS CONCERNING THE EXCISE DUTIES IN ROMANIA FOLLOWING THE ACCESSION TO THE EUROPEAN UNION.....	304
HADA TEODOR	304
ANGHEL DANA CRISTINA	304
THE IMPACT OF DIRECT FOREIGN INVESTMENTS ON THE ECONOMIC PRODUCTIVITY GROWTH - CASE STUDY CENTRAL AND EASTERN EUROPE.....	310
HALMI MIRELA	310
POPA DANIELA	310
HEDGING CURRENCY RISK IN EUROPEAN STOCK MARKETS: EVIDENCE FROM THE CURRENT FINANCIAL CRISIS	319
HOROBET ALEXANDRA	319
DRAGHICI ALINA	319
CONSTANTIN LAURA GABRIELA	319
HERITAGE, SHOULD BE SENT TO THE ACCOUNTING ANTIQUITIES MUSEUM?	330
ILINCUȚĂ LUCIAN – DOREL	330
DEVELOPMENTS IN THE BANKING INTEGRATION PROCESS: EVIDENCE FROM THE NEW EU MEMBER STATES	335
ILUȚ BOGDAN	335
POTLOG DORIAN	335
BUDGET REVENUES IN EU-27	342
INCEU ADRIAN MIHAI	342
ZAI PAUL	342
IMPORTANCE OF THE MEASUREMENT OF THE LIQUIDITY RISK IN BANKING MANAGEMENT.....	352
ION LUMINIȚA	352
ION ALEXANDRA	352

THE STYLIZED FACTS OF ASSET RETURNS AND THEIR IMPACT ON VALUE-AT-RISK MODELS.....	360
IORGULESCU FILIP	360
ENVIRONMENTAL AUDITING PROCESS – PART OF CORPORATE SOCIAL RESPONSIBILITY REPORTING.....	369
IVAN OANA RALUCA.....	369
PUȚAN ALINA	369
THE STRATEGIC ALIGNMENT BETWEEN KNOWLEDGE STRATEGY AND INFORMATION SYSTEM STRATEGY IN THE BANKING SECTOR.....	379
JUCAN CORNEL NICOLAE	379
DOLF BAIER MIHAELA SABINA.....	379
CURRENT CONSIDERATIONS ABOUT COST-BENEFIT ANALYSIS AND ABSORPTION OF THE STRUCTURAL AND COHESION FUNDS USED FOR INVESTMENT PROJECTS FROM ROMANIA.....	387
KAGITCI MERAL.....	387
BUȘU CRISTIAN	387
EMU-INDUCED TAX MIXES CHANGES A MULTIDIMENSIONAL ANALYSIS OF EURO AREA FISCAL STRUCTURES	394
LAZĂR ISADORA	394
IS THE ROMANIAN BANKING SYSTEM INTEGRATED INTO THE EUROPEAN ONE? A MONEY MARKET PERSPECTIVE.....	401
LOVIN HORĂȚIU.....	401
THE RECOVERY TERM'S CONTRIBUTION TO THE IDENTIFICATION OF VALUE LOSSES FROM THE USE OF FIXED ASSETS.....	407
MANEA MARINELA – DANIELA	407
BASEL III - THE STABILITY OF FINANCIAL SYSTEM	413
MARIN CORNELIA	413
THE DETERMINANTS OF BUDGET DEFICIT IN ROMANIA.....	420
MESEĂ OANA ELENA	420
APPROACH THROUGH PRACTICAL RESEARCH OF INTELLECTUAL CAPITAL	430
MIHAI IRINA	430
CIOBAN ALEXANDRA NARCISA	430
BALAN IOANA.....	430
FISCAL POLICY'S INFLUENCE ON ECONOMIC GROWTH IN THE EUROPEAN UNION.....	436
MIHAIU DIANA MARIETA	436
OPREANA ALIN.....	436
RELEVANCE OF ACCOUNTING INFORMATION FOR THE MARKET VALUE OF A COMPANY. CASE STUDY ON THE BUCHAREST STOCK EXCHANGE.....	441
MILOȘ MARIUS CRISTIAN	441
NICU IOANA.....	441
MILOȘ LAURA RAIS	441
ASPECTS REGARDING FISCAL HARMONIZATION IN EUROPEAN UNION.....	449
MOLDOVAN IOSIF	449
BUSINESS FAILURE PREDICTION FOR ROMANIAN SMES USING MULTIVARIATE DISCRIMINANT ANALYSIS	457
MOSCALU MARICICA.....	457
THE BUSINESS MODEL AND FINANCIAL ASSETS MEASUREMENT	467
NICULA ILEANA.....	467
LOCAL BUDGET CONSOLIDATION AS AN INSTRUMENT OF LOCAL AUTONOMY – EVIDENCE FROM ROMANIA.....	473
OPREA FLORIN	473
CIGU ELENA	473
MARKET INFORMATIONAL EFFICIENCY TESTS AND ITS CRITICS: THE CASE OF EMERGENT CAPITAL MARKETS	482
OPREAN CAMELIA.....	482
BRĂȚIAN VASILE	482
POST-CRISIS EXCHANGE RATE ARRANGEMENTS IN EUROPE	492
ORĂȘTEAN RAMONA.....	492
MĂRGINEAN SILVIA	492

QUALITATIVE ANALYSIS OF THE SIGNIFICANCE OF CREDIT RATING	499
ORHEIAN OANA MIHAELA	499
ACCOUNTING MODELS SPECIFIC TO THE INDEPENDENT EXPORT OF GOODS WITH SIGHT COLLECTION	506
PALIU – POPA LUCIA	506
RURAL DEVELOPMENT POLICY IN ROMANIA IN THE CONTEXT OF REFORMING THE COMMON AGRICULTURAL POLICY AFTER 2013.....	514
PĂUN (ȘARAMET) GEORGETA	514
PĂUN (CIOBANU) MIHAELA CRISTINA	514
CIOBANU LAURA	514
CURRENT ISSUES OF FISCAL CONTROL IN ROMANIA.....	522
POP IOAN.....	522
MOLNAR ANDRA.....	522
GABAN LUCIAN	522
SELECTED ASPECTS OVER A STUDY ON FINANCING ASSETS USING FINANCIAL LEASING IN SIBIU COUNTY	528
POPA DANIELA	528
HALMI MIRELA	528
CREATIVITY VERSUS ILLEGALITY WHEN OPTIMIZING A COMPANY’S FISCAL COST	539
POPA MIHAELA	539
ACCOUNTANCY – INFORMATION SOURCE FOR KNOWING THE ECONOMIC AND FINANCIAL ACTIVITY	545
PUICAN LILIANA.....	545
AVRAM MARIOARA.....	545
CREDIT RISK TRANSFER MECHANISMS IN THE EU BANKING SECTOR	552
ROMAN ANGELA	552
ȘARGU ALINA CAMELIA.....	552
THE MANAGERIAL ACCOUNTING - A WAY OF PERFORMING FINANCIAL MANAGEMENT IN ROMANIAN SMALL AND MEDIUM-SIZED ENTERPRISES	561
SABOU FELICIA.....	561
FINANCIAL INSTRUMENTS USED TO INCREASE THE ABSORPTION OF EU FUNDS BEFORE AND AFTER EU ACCESSION, IMPORTANT INFLUENCE ON ROMANIAN AGRICULTURAL POLICY.....	566
SASU GEORGICĂ.....	566
IONCEF CEZAR-SÂNDEL	566
CHALLENGES OF OPERATING AND COMPLYING WITH THE UCITS IV DIRECTIVE...577	577
SAVA CĂTĂLINA	577
RADU IOANA	577
CREDITING THE AGRICULTURE-A PAST AND PRESENT CONCERN OF THE ROMANIAN BANKING SYSTEM	584
SBÂRCEA IOANA RALUCA	584
THE CURRENT INTERNATIONAL FINANCIAL CRISIS AND THE FINANCIAL SUPERVISION INSTITUTIONAL ARRANGEMENTS EFFECTIVENESS IN THE EUROPEAN UNION COUNTRIES.....	590
STOICA OVIDIU.....	590
CĂPRARU BOGDAN.....	590
A FINANCIAL-ACCOUNTING APPROACH TO PERFORMANCE, IDENTIFYING FINANCIAL KEY COMPONENTS.....	598
TANASĂ FLORENTIN-EMIL.....	598
HOROMNEA EMIL	598
UNGUREANU SEBASTIAN	598
CONSIDERATIONS OVER THE METHODOLOGY OF FINANCIAL ANALYSIS AND ITS LINKAGE WITH BANKABILITY OF EUROPEAN FUNDED INVESTMENT PROJECTS	608
TRENCA IOAN.....	608
PETRIA NICOLAE	608
DROJ LAURENȚIU	608
THE TOLERANCE AND OPERATIONAL RISK APPETITE IN BANKING.....	618
PETRIA NICOLAE	618

TRENCA IOAN.....	618
MUTU SIMONA	618
ANALYSIS OF FACTORS INFLUENCING THE LEVEL AND DYNAMICS OF NET PROFITS	625
.....	
UNGUREANU SEBASTIAN	625
TĂNASE FLORENTIN EMIL.....	625
STUDY REGARDING THE EVOLUTION OF THE WORKING CAPITAL AND THE NECESSARY WORKING CAPITAL FOR 20 ROMANIAN COMPANIES DURING 2008 – 2010	634
.....	
VASIU DIANA ELENA	634
CIUDIN ADRIAN	634
STUDY OF DETERMINANT FACTORS OF DIVIDEND POLICY PROMOTED BY COMPANIES LISTED ON BUCHAREST STOCK EXCHANGE	645
VINTILĂ GEORGETA	645
MOSCU RALUCA GEORGIANA	645
PUBLIC DEBT SERVICE AND ITS IMPACT ON PUBLIC EXPENDITURES.....	655
ZUGRAVU BOGDAN GABRIEL.....	655
DOBRA NSCHI MARIAN	655
PUBLIC EXPENDITURES IMPACT ON ECONOMIC GROWTH: EVIDENCES FOR ROMANIA	665
ZUGRAVU BOGDAN-GABRIEL	665
SAVA ANCA-ȘTEFANIA	665