

AN OVERVIEW ON THE ROMANIAN BANKING SYSTEM STABILITY

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Abstract

This paper aims to analyze the evolution of the Romanian banking system. To achieve this goal we consider a number of indicators that the financial literature sees as relevant for the stability of a banking system. The analysis will include a period of over 10 years and will be made in comparison to the EU countries. The conclusion that we hope to draw is, on the one hand that the Romanian banking system's stability has improved in the recent years and, on the other hand, that it is following the same trends as the banking systems of the other EU countries.

Keywords: banking system, financial stability, non-performing loans, capital adequacy

JEL classification: G21

1. Introduction

In the last two decades, the financial system in Romania has undergone a series of changes both in terms of organization and performance. Structural transformations aimed at shaping a financial system able to integrate into the European financial system. The financial crisis has deeply affected the performance of the Romanian financial system, while it was still in an early development stage.

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Since the Romanian financial system is predominantly bank-based, the most important problem is the stability of the banking system. The financial literature tried to establish a link between the stability of the banking system and the real economy development level, focusing primarily on two areas: establishing the link between financial system characteristics and long-term development of the economy (Levine, 1997, 2001, 2004; King and Levine, 1993; Demircuc-Kunt and Maksimovic, 1998; Rajan and Zingales, 1986) and determining the impact of financial crisis on the real economy system (Hogart, Reis, and Saporta, 2002; Boyd, Kwak and Smith, 2005; Serwice, 2007; Kroszner, Laeven and Klingebiel, 2007; Dell'Ariccia, Detragiache and Rajan, 2008).

The above mentioned authors have established a link between the openness of the financial system and economic growth stressing that the level of development of the financial system contributes to economic growth. Furthermore, they showed that the occurrence of a crisis of the financial system coincide or foregoes a crisis of the real economy.

The stability of the banking system therefore becomes an important issue to consider because the impact of a financial crisis can be felt by the entire economy, the problem being even the more delicate as the real economy is in its turn at an early stage of development as in our country.

In the following chapters we will try to analyze the Romanian banking system in terms of its stability. The analysis will be performed using indicators that the financial literature sees as being representative for the system's stability (Čihák, Demircuc-Kunt, Feyen and Levine, 2012). The analyzed data ranges over a ten years period, starting before the financial crisis and ending in 2014 or 2011 in some cases where more recent date where unavailable. A comparative analysis will also be conducted in an attempt to position the Romanian banking system in the European context.

2. The non-performing loans ratio

In the last decades, many experts have tried to identify the most relevant indicators of banking system's stability and to determine the factors that influence their evolution.

Some authors consider that the most important indicator of a banking system's stability and of the level of risks undertaken by banks in the non-performing loans ratio (NPLs) (Jimenez et al, 2007; Agoraki et al, 2011; Klein, 2013; Goel and Hasan, 2011). The justification of its importance is that

a considerable increase in the value of non-performing loans, on one hand, decreases the investors' confidence and, on the other hand, hinders banks' access to financing sources, which may lead to the destabilization of the banking system.

The ratio of NPLs measures credit risk (Beck, 2008). It represents the ratio of defaulting loans of a country's banking system to the total value of loan portfolio of a country's banking system:

$$NPL = \frac{NPLs}{TGL} \quad (1)$$

where NPLs is non-performing loans and TGL is total gross loans.

From comparing the value of this indicators for the 28 EU countries during 2004 to 2014 (table 1) we notice a deteriorating credit quality in most EU countries in the post-crisis period. This trend is even more pronounced in countries with less developed economy, which supports the conclusion that there is a link between financial system stability and the development of the real economy. Countries that have the highest credit quality deterioration are the ex-Soviet countries, Bulgaria, Hungary, Croatia, Greece and Romania. Among Euro area countries Finland and Luxembourg had a constant evolution of the indicator, while all the other countries recorded increased levels of non-performing loans.

Table 1: The evolution of the NPLs ratio in EU member states between 2004 and 2014

Country	004	005	006	007	008	009	010	011	012	013	014
Austria	.7	.6	.7	.2	.9	.3	.8	.7	.8	.9	.8
Belgium	.3		.7	.4	.7	.7	.8	.8	.8	.3	.2
Bulgaria		.2	.2	.1	.5	.4	1.9	4.9	6.6	6.9	..
Croatia	.5	.2	.2	.8	.9	.7	1.1	2.3	3.8	5.4	6.4
Cyprus					.6	.5	.6	.2	8.6	3.7	7.9
Czech Republic		.9	.6	.7	.8	.6	.4	.5	.2	.2	.7
Denmark	.7	.2		.6	.2	.3	.1	.5	.0	.6	.8
Estonia	.3	.2	.2	.5	.9	.2	.4		.6	.5	..
Finland	.4	.3	.2	.3	.4	.6	.6	.5	.5
France	.2	.5		.7	.8		.8	.7	.3	.5	..

Germany	,9	,1	,4	,7	,9	,2	,7	,0	,9	,7	..
Greece		,3	,4	,5		,7	0,4	4,7	3,3	1,9	3,5
Hungary	,8	,3	,6	,3		,7	,8	3,3	5,8	6,7	6,6
Ireland	,8	,7	,7	,8	,6		,6	4,7	4,6	5,3	..
Italy	,6	,3	,6	,8	,3	,4	0	1	3,7	6,5	..
Latvia	,1	,7	,5	,8	,6	6,4	9	7,5	,7	,4	,3
Lithuania	,2	,6			,6	9,3	9,7	6,4	4,8	1,6	,9
Luxembourg	,3	,2	,1	,4	,6	,7	,2	,4	,1	,2	..
Malta	,5	,4	,9	,1	,8	,6	,3	,4	,2	,2	,5
Netherlands	,5				,7	,2	,8	,7	,1	,2	,0
Poland	4,9	1	,4	,2	,5		,8	,2	,2	,0	..
Portugal		,5		,8	,6	,8	,2	,9	,8	0,6	0,8
Romania	,1	,4	,8	,6	,8	,9	1,9	4,1	8,2	1,9	2,3
Slovak Republic	,6		,2	,5	,2	,3	,8	,6	,2	,1	,2
Slovenia		,5			,2	,8	,2	1,8	5,2	3,3	4,6
Spain	,8	,8	,7	,9	,8	,1	,7	,3	,5	,4	..
Sweden	,1	,8	,8	,6			,8	,7	,7	,6	,6
United Kingdom	,9		,9	,9	,6	,5		,9	,7

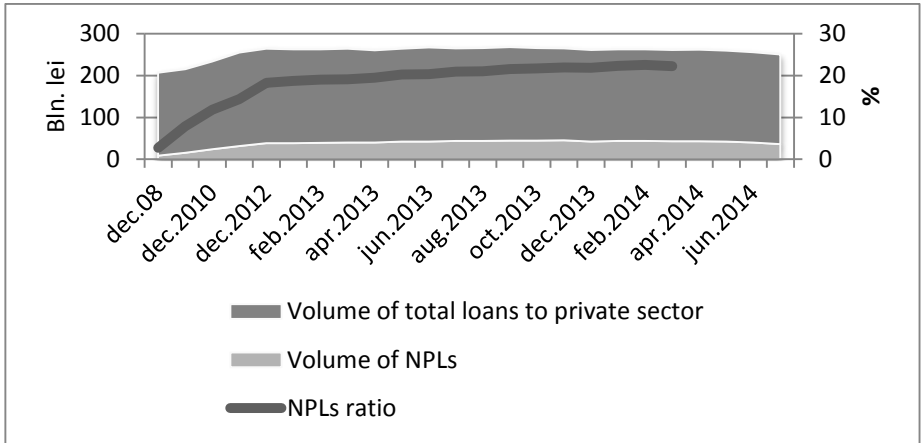
Source: The World Bank Global Financial Development Database, www.worldbank.org and The IMF Financial Soundness Indicators, October 2014

In Romania's case, the NPLs ratio increased significantly in this period, reaching a historic high of 22.3% in 2014, but this increase is mainly due to a lower volume of total loans and less to the deterioration of credit quality (figure 1).

The total volume of loans given by banks to the private sector decreased in July 2014 by almost 10 bln. lei compared to the value of January 2013, while NPLs volume recorded at the same two milestones a decrease of about 2 bln. lei. In absolute terms, the highest level of NPLs volume of 45.11 bln. lei was reached in November 2013, registering a downward trend thereafter to a low of 36.55 bln. lei in July 2014.

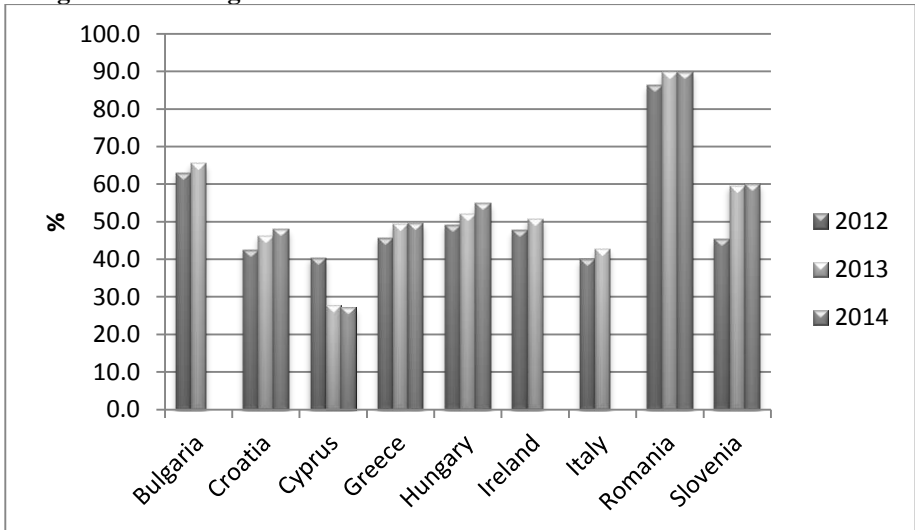
Same as other EU countries, the banking system in Romania protected itself against the risk of non-performing loans by provisioning exposures in accordance with IFRS requirements applicable from 2012 (figure 2).

Figure 1: The evolution of total gross loans, NPLs and NPLs ratio in Romania between December 2008 and July 2014



Source: National Bank of Romania Financial Stability Report 2014, www.bnr.ro

Figure 2: Coverage of NPLs in Romania and some selected countries of EU



Source: The IMF Financial Soundness Indicators, October 2014

Compared to other EU countries that reached NPLs ratio values in the same range during the analyzed period, the level of provisions in Romania is proving to be significantly larger, reflecting a higher level of caution of the Romanian banking system.

3. The bank z-score indicator

Some researchers (Čihák and Schaeck, 2010) believes that the NPLs ratio is not the most appropriate indicator of a banking system's stability as it is a lagging indicator of soundness.

Therefore, the literature has focused lately on another indicator of stability, the bank z-score or distance to default (Boyd and Runkit, 1993; Demirgüç-Kunt, Detragiache and Tressel, 2008; Čihák and Hesse, 2010).

The bank z-score compares the level of capitalization and returns to that of the potential for risk (volatility of returns) and is calculated using the formula:

$$z = \frac{k+\mu}{\sigma} \quad (2)$$

where k is equity capital as percent of assets, μ is return as percent of assets and σ is standard deviation of return on assets as a proxy for return volatility.

Although it has the disadvantage of being an indicator calculated solely on the basis of the financial statements of banks, data that can be embellished to reflect a better situation than the actual one, the z-score can indicate the likelihood that a financial institution enters into insolvency, its value being inversely proportional to the level of this risk.

For the EU countries, the indicator recorded in the period 2000-2011 following values (table 2):

Table 2: The evolution of bank z-score indicator in EU member states between 2000 and 2011

Country	000	001	002	003	004	005	006	007	008	009	010	011
Austria	0,11	7,32	8,68	2,56	0,87	2,30	6,08	9,39	4,18	5,77	3,95	2,62
Belgium	,15	,91	,88	,22	,31	,66	,38	,48	,46	,86	,85	,37
Bulgaria	8,56	0,35	0,38	9,72	6,03	5,14	4,39	6,23	6,34	6,73	6,68	6,78
Croatia	9,77	8,08	1,70	8,35	8,28	0,10	1,91	4,74	8,71	8,40	8,22	7,57
Cyprus	,09	,02	,87	,80	,63	,92	,91	,09	,93	,76	,53	,04

Czech Republic	1,30	,74	2,18	3,01	4,58	3,95	3,31	1,16	3,54	4,66	4,83	4,49
Denmark	8,20	6,85	6,04	6,85	6,87	5,53	6,39	4,15	0,01	1,11	2,50	3,23
Estonia	0,53	1,84	1,90	1,62	,29	,50	,41	,21	,96	,38	,49	1,15
Finland	5,58	2,22	3,78	2,47	9,49	8,95	9,18	1,76	5,54	5,39	2,80	,93
France	7,66	7,63	8,69	8,14	7,51	4,13	6,89	2,11	,04	4,19	4,85	3,48
Germany	6,55	5,81	4,58	1,34	0,47	2,52	2,65	3,73	,92	1,88	4,02	2,72
Greece			,05	,46	,44	,52	,56	,53	,71	,22	,92	3,29
Hungary	0,33	0,98	2,28	3,06	5,67	4,10	4,84	3,27	1,47	2,42	0,84	1,88
Ireland	,19	,82	,78	,98	,79	,81	,74	,62	,17	,79	,00	,06
Italy	,85	,93	0,73	1,47	7,44	2,63	1,59	3,12	1,77	2,19	3,08	,44
Latvia	,63	,00	,82	,70	,55	,60	,58	,80	,59	,00	,74	,69
Lithuania	,67	,97	,08	,04	,29	,10	,28	,72	,59	,40	,53	,70
Luxembourg	8,56	9,92	3,27	3,62	4,15	4,67	4,51	4,17	3,23	7,77	8,88	6,11
Malta	,68	0,14	,68	2,58	8,82	8,76	2,08	4,91	0,21	6,49	4,04	3,79
Netherlands	1,11	,89	5,65	5,26	,70	,44	,92	,73	,27	,98	,01	,62
Poland	,55	,06	,45	,02	1,28	0,63	0,49	0,11	,95	,75	0,12	,82
Portugal	5,28	3,64	3,13	6,80	7,23	9,40	2,61	4,25	4,42	8,92	7,03	4,74
Romania	0,36	1,15	8,38	5,78	5,55	2,95	1,38	,50	0,88	0,28	1,22	1,39
Slovak Republic	6,10	7,90	1,36	9,76	5,74	0,87	1,94	7,59	1,62	7,91	9,29	1,10
Slovenia	6,05	4,87	4,72	7,75	6,27	4,55	4,17	4,17	3,96	3,06	2,31	0,95
Spain	3,58	6,46	4,27	3,17	3,22	2,69	2,13	1,10	2,43	3,19	3,07	8,94
Sweden	6,41	9,34	6,04	7,84	2,17	7,80	8,79	8,03	6,17	1,26	2,00	1,50
United Kingdom	3,54	5,30	6,51	8,68	2,96	,62	,65	,69	,27	,52	,25	,08

Source: The World Bank Global Financial Development Database, www.worldbank.org

Considering that a high value of the indicator shows a low probability of insolvency, data analysis for EU countries leads us to conclude that the most stable banking systems are those of Croatia, Austria, Sweden, Spain, Luxembourg, the opposite being Greece, Ireland, Cyprus. We also notice that in evolutionary terms, most countries have recorded a decline in the value of

z-score, which indicates a worsening of the system's stability and an increasing risk of insolvency.

Regarding the case of Romania, the risk that the value of banks' assets are insufficient to cover the amount of debt increased during the study period, the minimum z-score was reached in 2007, failing to further achieve a growth higher than half its value at the beginning of the period.

A possible explanation for this trend can be found in the low level of lending activity, which led to the reduction of bank assets value, but also in the strong links between Romania's banking system and the banking systems of countries in difficulty, such as Greece.

Compared to the situation of the other European banking systems, we can conclude that the probability to default of the Romanian banking system was, at the end of 2011, at an average level comparable to that in Hungary, Estonia, Slovenia.

4. Capital adequacy ratio

In addition to the two indicators presented above, the stability of the banking system can be reflected by other indicators designed to quantify the capital adequacy.

An indicator used by the financial literature to measure the capital adequacy is Bank regulatory capital to risk-weighted assets. Risk-weighted assets consist of the bank's assets or off-balance-sheet exposures, weighted according to risk. The bank regulatory capital is the amount of capital a bank has to hold as required by the financial regulators. The indicator is calculated by dividing the amount of risk-weighted assets to the total regulatory capital.

The levels of the bank regulatory capital to risk-weighted assets indicator recorded by the banking systems of EU member states between 2004 and 2014 are presented in table 3.

Table 3: The evolution of bank regulatory capital to risk-weighted assets in EU member states between 2004 and 2014

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Austria	2,4	1,8	3,2	2,7	2,9	5	5,4	5,8	7,0	8,0	..
Belgium	3	1,5	1,9	1,2	6,2	7,3	9,3	9,1	8,2	8,7	8,0
Bulgaria	6,6	5,3	4,5	3,8	4,9	7	7,5	7,5	6,6	7,0	..
Croatia	6	5,2	4	6,3	5,1	6,4	8,8	9,2	0,9	0,9	1,1

Cyprus					1	2,1	2,5	2,8	,6	4,3	5,1
Czech Republic	2,5	1,9	1,4	1,5	1,6	4	5,3	5,3	5,6	6,5	7,0
Denmark	3,4	1,5		0,6	2,4	6,1	6	7	8,9	9,2	7,7
Estonia	1,5	1,7	3,2	4,8	8,9	2,3	2,1	8,6	9,3	0,0	..
Finland	9,1	7,2	5,1	5,1	3,6	4,6	4,4	4,2	7,0	6,0	..
France	1,5	1,3	0,9	0,2	0,5	2,4	2,7	2,8	4,5	5,4	..
Germany	2,4	2,2	2,5	2,9	3,6	4,8	6,1	6,4	7,9	9,2	7,7
Greece	2,8	3,2	2,2	1,2	,4	1,7	2,2	0,1	,6	3,5	5,7
Hungary	2,4	1,6	1	0,4	2,3	3,9	3,9	4,2	6,3	7,4	8,1
Ireland	2,6	2	0,9	0,7	0,6	0,9	4,6	9,2	9,2	0,4	..
Italy	1,6	0,6	0,1	0,1	0,4	1,7	2,1	2,8	3,4	3,7	..
Latvia	1,7	0,1	0,2	1,1	1,8	4,6	4,6	7,4	6,7	8,1	9,9
Lithuania	2,4	0,3	0,8	0,9	2,9	4,2	5,6	4	5,7	7,6	0,4
Luxembourg	7,5	5,4	5,3	4,3	5,4	9,2	7,4	0,8	9,1	0,9	9,7
Malta	1,3	7,1	5	4,7	4,6	5,9	5,3	5,8	4,1	4,9	4,9
Netherlands	2,3	2,6	1,9	3,2	1,9	4,9	3,9	3,5	4,2	4,9	7,3
Poland	5,4	4,6	3,2	2	1,2	3,3	3,9	3,1	4,8	5,7	..
Portugal	0,4	2,5	1,8	0,4	,4	0,5	0,3	,3	2,6	3,3	2,3
Romania	0,6	1,1	8,1	3,8	3,8	4,7	5	3,4	4,9	5,5	6,3
Slovak Republic	8,7	4,8	3	3,2	1,1	2,6	2,7	3,4	5,7	6,5	7,5
Slovenia	1,8	0,5	1	1,2	1,7	1,7	1,3	1,9	1,4	3,7	4,8
Spain	1	2	1,9	1,4	1,3	2,2	1,9	1,8	1,6	3,3	..
Sweden	0,1	0,1	0	,8	0,3	2,7	2,0	1,5	1,7	2,0	2,0
United Kingdom	2,7	2,8	2,9	2,6	2,9	4,8	5,9	5,8	6,4

Source: The World Bank Global Financial Development Database, www.worldbank.org and The IMF Financial Soundness Indicators, October 2014

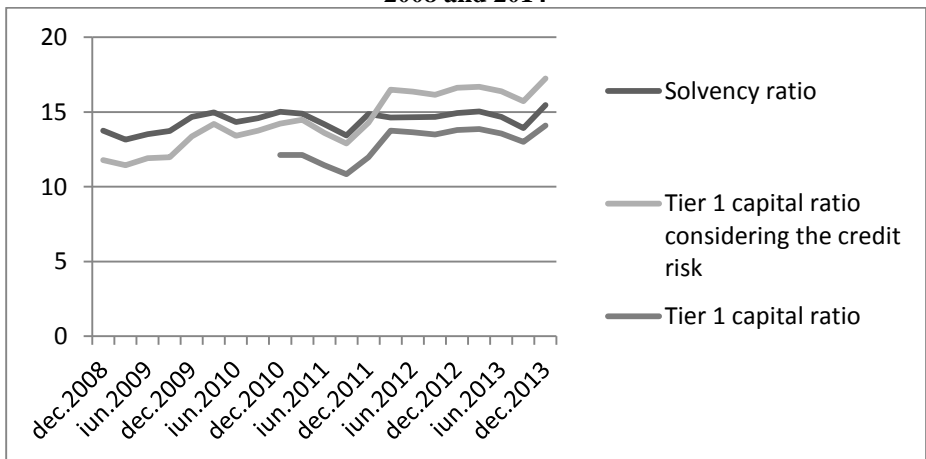
Regarding the Romanian banking system, we can notice an improvement of the indicator in the period preceding the financial crisis. In

terms of capital adequacy, the Romanian banking system falls within the prudential requirements of the European regulators, reaching levels of capital adequacy higher than those required by the European rules. This is due to the supervisory measures imposed by the National Bank of Romania, which establishes higher levels for the solvency ratios that have to be reached by credit institutions that are considered to have riskier profiles than those established by the European regulations.

The analysis of capital adequacy for the Romanian banking system can be continued by determining solvency indicators such as the solvency ratio and the tier 1 capital ratio (figure 3).

An increasing trend of the solvency ratio may be thus noted and, more importantly, in our opinion, a growing trend of the tier 1 capital ratio. This shows, beyond the existence of sufficient equity funds to cover risky assets, the quality of these funds. Tier 1 capital consists of primary capital sources, such as paid-up capital instruments, share premiums, financial results, reserves, the fund for general banking risks. Thus, we believe that, in terms of capital adequacy, the banking system in Romania is in a comfortable situation, being able to cope with the immediate risks.

Figure 3: Capital adequacy indicators for the Romanian banking system between 2008 and 2014



Source: National Bank of Romania Financial Stability Report 2014, www.bnr.ro

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5. Conclusions

The main purpose of this study was to determine how the stability of the banking system evolved in Romania, both individually and in comparison with other EU countries. For this we used three representative indicators that the financial literature devoted to the stability of banking systems.

From the analysis of the first two indicators, NPLs ratio and z-score, we conclude that the Romanian banking system is in a difficult moment. Although none of the two indicators reaches worrying values, both enrolling in the EU countries' averages, their trend leads to the conclusion that the Romanian banking system stability deteriorated in the post-crisis period.

In terms of capital adequacy, we believe that the Romanian banking system is ready to absorb a possible shock coming from bad loans, the level of regulatory capital being higher than the European requirements. The quality of the available capital, mainly consisting of Tire 1 capital, adds even more consistency to this affirmation.

The attempt to position the banking system in Romania in the European context reveals its interconnection with other systems in the EU countries, mainly due to the structure of Romanian banks, mostly subsidiaries of European banks. From this point of view, we considered it important to analyze the stability of banking systems in countries such as Austria, France and Greece. The levels of the analyzed indicators for these countries, except Greece, have improved in recent period, which has had a positive impact on the Romanian banking system.

In spite of the positive trend of all analyzed indicators, we cannot say with certainty that the banking system in Romania will continue to strength its position in terms of stability because we believe that a significant part in the melioration of the indicators taken into account was played by the low levels of the lending activity. It is quite difficult to predict at this time what will be the reaction of these indicators to a possible resumption of lending if this is done without being accompanied by a healthy economic grow.

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