RISK MANAGEMENT IN SMALL AND MEDIUM SIZED ENTERPRISES

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Abstract

Unlike uncertainty, risk is characterized by the possibility of describing a law of probability for expected results, indicating the possibility that economic agents know this law. Risk and uncertainty are combined in different proportions in real life

Risk is a social, economic, political or natural term, whose origin lies in the possibility that a future action would generate losses due to incomplete information at the moment of decision-makingor due to inconsistency of certain logical reasoning.

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1. Introduction

Within the financial management system, the analysis of the enterprise's ability to be solvent and to defeat the bankrupcy risk is central. Any disruption in the payment of obligations generates damages and requires urgent correction. However, the financial balance is absolutely imperativeand cannot be disregarded under any circumstances. In economic practice, it is conceivable that an enterprise experiencing a difficult period to temporarily abandon some development objectives be they economic or social. Yet under

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no circumstance is it allowed to forfeit its solvency target, which represents the financial condition of survival (Stancu, I. 2002).

Evaluation of enterprise's capacity to settle its obligations is differently assessed based on the concrete economic and financial conditions in which it operates. Thus, an enterprise may have temporary or occasional difficulties caused, for example, by uncovering in time an important claim or by accelerating payments in a period of rapid business growth. In this case, payment difficulties arise as an expression of temporary inconsistency that does not affect the company's image. Simple solutions may allow passing these difficulties and restoring the continuity of payments: obtaining extended terms of payment from suppliers, deferred liabilities, and obtaining short-term loans.

The enterprise may know periodic financial difficulties, such as late payments at certain times of the year or periods of accelerated growth. Even if the viability of the enterprise is not in danger, its image can be degraded due to periodic disturbances.

Ongoing difficulties in settling obligations are the expression of a structural economic and financial fragility. These can generate activity restrictions, reduction of the number of employees, management restructuring or in extreme cases, loss of the business.

Among the complexity of issues regarding the risk of bankruptcy, the following ones are essential for the decision making process:
- Static analysis of bankruptcy risk based on the balance sheet;
- Analysis of bankruptcy risk using scoring methods;
- Functional analysis of the bankruptcy risk.

2. Static analysis of bankruptcy risk based on the balance sheet

The risk of ruin (bankruptcy) occurs when the company reaches a very difficult situation practically being condemned to extinction and disappearence, which means that the employees will lose their jobs, creditors lose their claims, the shareholders lose themoney they have invested; this risk is most feared. (Bogdan I. 2002)

The financial assets analysis is essentially a static analysis where the value and creditworthiness of the company have priority (Brezeanu, P. 2008).

This type of analysis has been for a long time the only method in economic theory to assess risks. The main operational instruments that the

financial analysis uses to investigate the bankruptcy risk are: the working capital and solvency ratios.

2.1. Analysis of the working capital

With regard to patrimonial purposes, assets and liabilities are made up of two large masses:

- a relatively constant mass (duration> 1 year), consisting of asset (Ai) and the permanent capital (CP);
- a movable mass (duration <1 year), consisting of current assets (Ac) and short-term obligations (STO).

According to asset theory, a company is solvent if the balance of the same duration masses is assured, in compliance with financial rules:

1. Fixed assets (Ai) = Permanent capital (CP)
2. Current assets (Ac) = Short-term obligations (TSO)

Strict adherence to these equations of equilibrium involves an uninterrupted activity and a perfect regularity on receivables and payments. In other words, the company must have at every maturity date of obligation sufficient funds to pay them. The practical realization of these requirements is difficult because the assets (the potential entry of funds) and liabilities (as potential outputs funds) are asymmetric in terms of risk. While short-term obligations chargeability is certain, transforming the assets into liabilities is random, being disturbed by a number of economic, financial factors and by their situation.

This asymmetry requires the need to constitute a reserve, a margin able to cope with "the maturity date irregularities", known in economics as the working capital.

The working capital can be defined:

a) based on the elements contained in the upper part of the balance sheet: FR = CP - Ai.

Therefore, the working capital represents that portion of the permanent capital that exceeds the net assets and may be impaired by the financing of current assets.

b) based on the balance base elements: FR = Ac - OTS

The working capital represents the excess of current assets over the value of short-term obligations. Starting from the firm's own permanent capital and including the borrowed permanent capital, one can calculate the

necessary working capital both for the firm's own capital and well as for the borrowed one.

The own working capital measures the surplus of own equity over-current assets. It is calculated as follows:

- Own working capital = Working capital - Medium and long term liabilities
- Foreign working capital is the difference between working capital and the own one.

The concept of working capital, resulting from the mapping of liquidity assets with liabilities chargeability allows the short-term assessment of obligations reimbursement risk, the bankruptcy risk. Among current assets, the potential liquidity (through the realization of inventories, receivables collection and preservation of availability) and the potential chargeability the following situations may practically occur:

a) $Ac = OT$, $FR = 0$

Short-term solvency seems assured, but the balance is fragile and it can be compromised by any disturbance in claims settlement.

b) $Ac > OTS$, $FR > 0$

A surplus of potential short term liquidity may occur as opposed to the short-term potential chargeability. The company has a favorable situation in terms of solvency, because it is able to meet its obligations at maturity dates, having besides a potential liquidity buffer stock.

c) $Ac < OTS$, $FR < 0$

Potential liquidity does not fully cover the potential chargeability andthe company hasfinancial difficulties regarding the financial balance. Proper appreciation of the significance of working capital to the financial stability requires consideration of the average duration of assets and liabilities that in practice are equal only in exceptional cases.

• If current assets are turned over (thus becoming liquid) faster than liabilities, it means that the company may secure the financial balance. A classic example of this is represented by the situation of the distribution sector companies, whose work is characterized by a rapid turnover of current assets, cash receipt due to sales (customers) and a slower rotation of short-term obligations due to payment favorable deadlines granted by suppliers. In these

circumstances, the financial balance is compatible not only with a lower working capital value, but even with a negative working capital.

• If current assets are turning over slower than the short-term obligations (so the time to assests transformation in liquidity exceeds the time to pay obligations), the maintenance of the financial equilibrium requires a positive and high value working capital.

Thus it follows that there is no simple and clear relationship between the working capital and the bankruptcy risk of a company. Some units meet the requirements of the financial balance with a negative working capital, while others prove to be insolvent despite a positive working capital. (Stancu, I. (2002).

Moreover, some companies maintain their solvency with a low working capital, while others have financial difficulties despite a high value working capital.

2.2. Analysis of insolvency risk

The risk of insolvency occurs when the company cannot settle payments, this inability resulting either into liquidation, when there is no chance of recovery, or – through a capital infusion or by credit financing – to its recovery by reorganization carried out within a given period of time.

The solvency ratioreport on feasible assets to meet contingent obligations in order to evaluate the bankruptcy risk. The rates commonly used are:

a) the overall solvency ratio (OSR), which compares all the potential liquidity associated with current assets with all annually outstanding obligations. It is calculated as follows:

OSR = (Current assets) / (short-term liabilities)

OSR enables the assessment of the coverage of short-term liabilities by current assets. A unit rate shows a full correspondence between current assets and the corresponding sources. An over-unit value of this ratio indicates the existence of greater assets than short-term obligations and, therefore, using of a part of the permanent capital to finance the exploitation.

The overall solvency ratio is equivalent with the so-called "working capital ratio" (WCR) calculated as the ratio of permanent capital and current assets:

WCR = (permanent capital) / (fixed assets)

This rate is higher than one when at the coverage of current assets has competed, in addition to short-term obligations, the permanent capital.

The overall solvency ratio does not allow a definitive judgment on the short-term solvency. Its meaning has a greater margin of approximation, due to the number of variables of solvency: the nature of the industry, the structure of current assets, the rate of assets turnover and inventories, seasonal intensity in activity.

> b) partial solvency ratio (PSR), which excludes stocks from current assets, these ones representing the most uncertain element in terms of its value and liquidity:

PSR = (Current assets - Inventories) / (short-term obligations) or:
PSR = (Loans + Placements + Deposits) / (short-term liabilities)

PSR expresses the company's ability to meet its short-term obligations from claims and availabilities.

This rate, typicallylower than 1, should be analyzed and interpreted with caution by taking into account issues of detail regarding the structure of claims (number of customers, their share in total debt). In economic theory there are views according to which a rate between 0.8 and 1 would represent an optimal situation of solvency.

> c) Immediate solvency ratio (ISR), which puts relates the most liquid assets with short-term obligations:

ISR = (Placements+ Deposits) / (short-term liabilities)

In economic theory it is estimated that RSI> 0.3.

Interpretation of the rate should involve other information concerning the conditions of work. Although, theoretically, a high rate indicates liquidity, respectively a high solvency, it can have other meanings, such as a lesser performance of the available resources. Also, a high value of this ratio is not a guarantee of solvency if the other assets have a low degree of liquidity. A low value of the immediate solvency ratio can be perfectly compatible with maintaining the financial balance if the company minimizes its income, instead holding investment securities, receivables, inventories easily mobilized in accordance with the chargeability of term obligations.

Most financial organizations in market economy countries use also other ratios for assessing the financial risk. One of these is the financial autonomy rate (FAR).

FAR= (medium and long term liabilities) / (Own capital)

Lenders require this ratio to be smaller than 1. Also the solvency assessment is recommended through the comparison of the net asset value with the total of liabilities. Some financial institutions claim that the net asset value should be greater than one third of the liability.

Net assets> 3 Passive.

The solvency assessment through the rates method is often less significant due to general assessment of liquidity, respectively solvency, without taking into consideration the degree (duration) of realization of assets, respectively liabilities.

3. Bankruptcy risk analysis through scores method

Risk analysis methods described above allow the measurement of past performance of the company, informing in a small extent about its future. Financial results can degrade very quickly over time. Therefore the need for more accurate information about the future, about the risk of bankruptcy, appears. As a response to these practical requirements, the diagnosis of bankruptcy risk has experienced an important development due to the use of statistical methods for the analysis of financial condition starting from a set of rates. (Stancu, I. 2002)

The "scoring" method aims to provide predictive models for assessing the risk of failure of an enterprise. This method is based on statistical techniques of discriminant analysis. Its application involves the observation over several companies spread into two distinct groups: a group of companies in financial difficulties and a group of healthy businesses. For each of the two groups several installments should be set out, then the best linear combination of rates will be determined, which will allow to distinguish the two groups of companies.

Following the application of discriminant analysis, a "Z" score is obtained for each firm, a linear function to a set rate. The distribution of different scores distinguishes the healthy firms from the ones in difficulty.

"Z" score assigned to each company is determined by the function:

$Z = a_1x_1 + a_2x_2 + a_3x_3 + \ldots\ldots + a_nx_n,$

where:

- "x" represents the rates involved in the analysis;
- "a" is the weighting coefficient of each installment.

In economic theory a series of models based on scores method were developed, among which the best known are: the Altman model; Canon and Holder model; Holder, Loeb and Partier model; Bank of France model etc.

a) The function established by Altman has the following form:

$Z = 3.3\ x1 + 1.0\ x2 + 0.6\ x3 + 1.4\ x4 + 1.2\ x5$, where:

    x1 = Current result before tax / total assets

    x2 = Turnover / total assets

    x3 = Market capitalization / loans

    x4 = Reinvested profit / total assets

    x5 = Net current assets / total assets

Table 1 Risk analysis –Altman model

Nr. row.	SPECIFICATION	SYMBOL	2010	2011	2012	2013
	ALTMAN MODEL					
1	Total assets (TA)	TA	2.096.508	3.058.908	4.159.393	4.847.778
2	Total revenue (Tr)	Tr	5.113.373	7.846.329	7.542.282	8.347.296
3	Reinvested earnings (Rearn)	Rearn	157.095	0	0	0
4	Equity (Eq)	Eq	1.233.290	1.649.275	1.690.749	2.111.378
5	Total debts (Td)	TD = Îtml+Îts+Fz+Ob	863.218	1.409.633	2.468.644	2.736.400
6	Gross profit (Gp)	Gp	190.725	284.394	123.528	51.051
7	Current assets (Ca)	CA	1.293.394	1.699.114	2.556.857	2.111.082
8	T1	CA/ TA	0,6169	0,5555	0,6147	0,4355
9	T2	Rearn/ TA	0,0749	0,0000	0,0000	0,0000
10	T3	Gp/TA	0,0910	0,0930	0,0297	0,0105
11	T4	Eq/ TD	1,4287	1,1700	0,6849	0,7716
12	T5	Tr/TA	2,4390	2,5651	1,8133	1,7219
	Z=1,2xT1+1,4xT2+ +3,3T3+0,6xT4+T5		4,4417	4,2404	3,0599	2,7422

b) The Canon and Holder is based on the following function:

$Z = 16\ x1 + 22\ x2 - 87\ x3 - 10\ x4 + 24\ x5$, where:

x1 represents partial solvency ratio = (Loans + Placements + Deposits) / (short-term obligations);

x2 represents financial stability rate = Equity / Total Liabilities;

x3 is the rate (level) of financial expenses= Financial expenses / turnover;

x4 is the rate of remuneration for staff (staff costs in added value) = Salary costs / added value;

x5 is the share of gross operating surplus in added value = gross operating surplus / added value.

Bankruptcy risk depends on the score value. Therefore, 3 areas can be distingueshed:

- the unfavorable area for Z <4
- The uncertain area for 4 <Z <9
- The favorable area for Z> 9

The bankruptcy probability depending on score value is:

Score (Z)	Bankruptcy probability
Negative	> 80 %
0 – 1,5	75 – 80 %
1,5 – 4,0	70 – 75 %
4,0 – 8,5	50 – 70 %
9,5	35%
10	30%
13	25%
16	15%
16	10%

Table 2 Risk analysis Canon-Holder model

Nr. row.	CANON AND HOLDER MODEL					
	Specification	Symbol	2010	2011	2012	2013
1	Claims	Cl	423.771	481.541	1.377.138	1.073.049
2	Cash	Ca	587.555	842.015	778.384	629.425

3	Short-term Liabilities	Lia	844.369	1.400.696	2.468.644	2.304.463
4	Permanent capital	Pca	1.252.139	1.658.212	1.690.749	2.543.315
5	Total liabilities	TL	2.096.508	3.058.908	4.159.393	4.847.778
6	Financial expenses	Fe	37.694	71.671	95.126	210.258
7	Total revenues	Tr	5.113.373	7.846.329	7.542.282	8.347.296
8	Personnel expenses	Chp	1.422.984	2.014.627	1.466.510	1.968.100
9	Added value	AV	1.887.470	2.729.716	1.933.876	1.626.782
10	Gross profit of exploitation result	GPER	199.993	322.206	318.987	-634.053
11	R1	(Cl+Ca)/ Lia	1,19773	0,94493	0,87316	0,73877
12	R2	Pca/TL	0,59725	0,54209	0,40649	0,52464
13	R3	Fe/Tr	0,00737	0,00913	0,01261	0,02519
14	R4	Fe/AV	0,75391	0,73804	0,75833	1,20981
15	R5	GPER/AV	0,10596	0,11804	0,16495	-0,38976
	Z=0.16R1+0.22R2-0.87R3-0.1R4+0.24R5		0,4303	0,3805	0,3555	0,2830

4. Functional analysis of bankruptcy risk

Patrimonial bankruptcy risk analysis was completed by a functional analysis based on the concept of stocks and flows of uses and resources. The functional analysis is often described as a dynamic analysis, as opposed to fundamental heritage static analysis. In fact, functional analysis has a static nature when it is based on the analysis of stocks, or dynamic, when operating with streams of uses and resources.

4.1 The functional working capital and the working capital need

Functional working capital (FWC) is the difference between stable acyclic resources (SAR) and acyclic stable assets (uses) (ASA). Converted to formula FWC = SAR – ASA.

Functional working capital is intended to cover a portion of the financing need related to operating cycle.

The need for working capital represents the share of cyclical assets to be financed from stable resources. The need for working capital (NWC) is calculated as: NWC= CA (cyclic assets) - CR (cyclic resources).

The need for working capital knows important fluctuations during the operating cycle due to seasonal activity, usage on payment terms etc.Within the need of working capital stands the existence of a stable component to be funded from stable resources, ie either in equity or in the medium and long term loans. In a general way, the longer the operating cycle is, the greater the need for working capital is.

At the same time, the more detrimental the gap between streams is to the company, the greater the need for working capital is. Deficiencies in organization and management operating cycle such as slower rotation of stocks, late invoicing for customers, collection of receivables, difficult clients, inappropriate choice of providers, results in increased need for working capital. Given the duration of the operating cycle data, the need for working capital depends on the level of activity; In other words, if the turnover increases, the need for working capital recodes the same trend.

In practice, in a certain structure of the operating cycle, it is found that the ratio of NWC and CA t is relatively constant, with a variation rate rarely over 10-15%.

The need for working capital includes, besides the need for working capital for operating also the working capital need outside the exploitation (WCNOE).

It can be said therefore that the need for working capital allows appreciation of incidence of decisions on the supply, storage, credit - customers, payment terms to suppliers, financial investments etc on financing needs and the financial stability of the company.

4.2. Cash relations and bankruptcy risk assessment

The difference between functional working capital and the working capital need represent the cash balance (T): T = FWC - WCN.

The cash can also be calculated after the formula: T = TA - TP.

The cash relations reveal how to achieve the company's financial cycles.

a) From a functional point of view, the financial equilibrium is met if: FWC> WCN; this implies a positive balance of cash: T> 0. So, the working

capital is sufficient not only to finance the working capital need of service, but also for ensuring cash that may invest and hold availability. The permanent capital ensures in this case, a stable funding of:

    - the whole property;.

    - the need for working capital for operations;

    - excess liquidity.

Such a financial structure appears at first sight favorable in terms of financial equilibrium, respectively of risk. In the short term there may appear some payment difficulties if some cash resources have short-term payment deadlines. But such a situation cannot generate serious solvency problems as the negociation of a new loan or realization of assets should enable the company to overcome the existing difficulties. The existence of a positive cash balance might be a sign of a potential fragility on medium or long term. The abundance of stable resources could mean their effectively insufficient use, which in the medium or long perspective might create difficulties in capital remuneration and borrowing reimbursement.

b) If FWC <WCN, the company has a negative cash: T <0. In this case, the need for working capital may be financed entirely from the permanent resources, the company being obliged to use resources flows (mainly bank loans) to partially cover the financing needs generated by the operating cycle. Such a situation of the balance warns on the financial equilibrium, the company is considered vulnerable. Thus, the normal cycle operation justifies the use of cash resources so that the image, the company possibilies won't be questioned. The real issue generated by negative cash does not count in terms of solvency, but of dependence on banks, which provide the bulk of cash resources. Providing systematic renewal of loans in many cases leads to their transformation into long-term loans. For enterprises with financial difficulties, bankers get to share the risk with the owner, being forced to act as a quasi-associate. The company dependence on the bank can virtually generate the risk of non-renewal current credits, as well as the risk to accept disadvantageous credit conditions, especially at a higher interest rate.

c) If FWC = WCN, the cash balance is zero: T = 0.

This equality is only theoretical; in practice it can only have a passenger character. Maintaining a treasury which goes towards zero, even in conditions of fluctuation as an increase or decrease may be the expression of a financial management policy. Such a practice (T?0) defends the company

against the risks posed by both possession of over liquidities (inefficient use of resources) and a negative cash (dependence on banks).

The functional working capital, the need for working capital and the treasury relationships provide simple and rapid indications on the heritage structure and the problems of balance arised from the investments financing and exploitation. It's undoubtedly a top-level representation of the financial balance.

Table 3 Synthesis of risk indicators

RISKS						
Nr. row.	**Specification/year**	**2010**	**2011**	**2012**	**2013**	**Level of ref.**
RISK OF EXPLOITATION						
1	Exploitation revenue	5.083.020	7.886.538	7.603.226	8.799.259	
2	Operating Breakeven	4.840.473	7.439.674	7.370.341	8.529.183	
3	Position indicator					
4	- absolute (Ipoz)	242.547	446.864	232.885	270.076	
5	- relative (Ipoz%)	5%	6%	3%	3%	20%
6	Time of the break-even (Pm)	343	340	349	349	<
7	Modulus of elasticity (ke)	20,96	17,65	32,65	32,58	6,00
FINANCIAL RISK						
8	Financial Breakeven (Veprf)	4.856.294	7.522.538	7.492.871	8.816.273	
9	Position indicator	0	0	0	0	
10	– absolute	226.726	364.000	110.355	-17.014	
11	– relatively	5%	5%	1%	0%	20%
12	Time of the break-even	344	343	355	361	<
13	Modulus of elasticity	22,42	21,67	68,90	-517,18	6,00
BANKRUPTCY RISK						

	ALTMAN MODEL					
14	T1	0,6169	0,5555	0,6147	0,4355	
15	T2	0,0749	0,0000	0,0000	0,0000	
16	T3	0,0910	0,0930	0,0297	0,0105	
17	T4	1,4287	1,1700	0,6849	0,7716	
18	T5	2,4390	2,5651	1,8133	1,7219	
19	Z=1,2xT1+1,4xT2+ +3,3T3+0,6xT4+T5	4,4417	4,2404	3,0599	2,7422	>2,9
	CANON-HOLDER MODEL					
20	R1	1,19773	0,94493	0,87316	0,73877	
21	R2	0,59725	0,54209	0,40649	0,52464	
22	R3	0,00737	0,00913	0,01261	0,02519	
23	R4	0,75391	0,73804	0,75833	1,20981	
24	R5	0,10596	0,11804	0,16495	-0,38976	
25	Z=0.16R1+0.22R2-0.87R3-0.1R4+0.24R5	0,43027	0,38053	0,35553	0,28298	>0,16

1. Conclusions

Due to the vast problem of financial managemnet the present paper comprises only a part of the economic and financial indicators, namely those considered most relevant to the industry and the company profile.

Another objective in this work is to achieve a synthesis of indicators and groups of indicators through profilogramelor this easier by allowing managers to understand the evolution and role of indicators presented. In this sense, the absolute values of the indicators will be assessed points from 0-10, and points will be awarded based on qualifications. These qualifications will give an average group of indicators, thus expressing the position of the company, through the indicators analyse.

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