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**SPECIFIC ASPECTS REGARDING THE PREVENTION OF INSOLVENCY  
BASED ON THE FINANCIAL AND ECONOMIC ANALYSIS**

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**Abstract:** *The insolvency can be prevented and the life average of a company can be increased as long as the measures that must be taken to prevent this phenomenon are known. The prevision means, the possibility to see at a suitable moment the presence of some critical situations or the future evolution and phenomena that will be produced inside the company, and the prevention of the appearance and development of the insolvency state can be done through a continuous analysis of the economic and financial situation of the company based on some indicators provided by the financial situations of the company.*

**Key words:** *insolvency, prevision, critical situations, financial situations, indicators*

### **INTRODUCTION**

The insolvency can be prevented and the life average of a company can be increased as long as the measures that must be taken to prevent this phenomenon are known. The prevision means, the possibility to see at a suitable moment the presence of some critical situations or the future evolution and phenomena that will be produced inside the company, and the prevention of the appearance and development of the insolvency state can be done through a continuous analysis of the economic and financial situation of the company based on some indicators provided by the financial situations of the company. A company can face on short term some difficulties in developing its specific activity, especially related by the liquidity crisis. If these difficulties keep on the company's situation depreciates and it can lead to the payment incapacity or even insolvency. Depending on the accidental or permanent character of these difficulties the measures to be taken will consider the rejection or the approval of the request for insolvency followed by the rehabilitation or reorganisation of the valid activities and the liquidation of the invalid ones.

### **MATERIALS AND METHODS**

Law no 85/2006 mentions that the insolvency is presumed as being valid when the debtor hasn't paid his debt after 90 days from the payment deadline to one or more creditors that requested the payment of one certain, liquid and exigible debt. Therefore in practice the financial information is analysed in order to see if the debtor disposes of sufficient liquid assets in order to face to exigible debts, if he has unused credits, the transformation of debtors into liquidities by the means of the banks, rescheduling of some loans or obtaining some more advantageous creditors payment deadlines.

In order to be able to see the imminent insolvency and to file for the procedure request the debtor must elaborate a prevision of the company's financial situations especially of the treasury flows based on which he confirms or not such a potential risk. This analysis is a complex one and the debtor can turn to an expert.

Seeing the difficulty estate of the company and infringing the principle of continuity can be done only after a serious research. This presumes the company's investigation as a whole and of the procedural and structural components by using some specific methods and techniques in order to see the causes, the main strong and weak points and the elaboration of recommendations of strategic and tactic nature in order to

diminish or eliminate the weak points<sup>1</sup>. The degradation of the company's activity can be divided into:

- Economic degradation when the company is no longer profitable and it generates more expenses than income and the activity's result doesn't bring any more profit.
- Financial degradation which is due to the fact that the company can no longer cover the exigible debts from its liquid assets, the short term passive being superior to the short term asset
- The legal degradation generated by the difficult financial situation or even the ceasing of the payments due to the termination of the company's activity and in this situation the company's situation is compromised.

## RESEARCH RESULTS

If the payments are ceased, the crisis is generally advanced, the company's relations with its partners have become conflictuous and its saving is almost impossible. Once the general insolvency procedure opened, during the observation period it is very important that the judicial administrator to determine the level of the debtor's solvability reported to his possibility to reorganise the activity.

The bankruptcy risk can be determined by:

- analysing the statistics based on the balance sheet;
- analysing the dynamic based on the flows in the financing table;
- by scores' method.

The legal concept of the balance sheet ensures the determination of an important indicator of the administration – nett situation – that measures and analysis the own capitals.

The net situation (NT) can be determined by two methods starting from the two parties of the balance sheet, that is::

a) under the form of net patrimony (NP) as a difference between the total passiv (P) and the total debts to third parties (D) and it expresses own capitals:

$$NP = P - D$$

b) under the form of a net asset (NA) as a difference between the total asset (A) and the total debts to third parties (D) and it expresses the total value of the goods and values that are a full property of the company, not being affected by any debts:

$$NA = A - D$$

The net accounting asset is used to appreciate the company's solvability, its capacity to face deadline obligations. Bank usually uses as a minimum level a ration of 20 – 30% of the net asset in relation to the total passive.

In appreciating the solvability the following ratio can be used:

- **the general solvability ratio** (rsg)  $rsg = \text{Current asses} / \text{Current liabilities}$

Its normal value in some works is of 1.2 - 1.8, and in other is of 2 – 2.5

- **the immediate solvability ratio:** (rsi)  $rsi = \text{Current asses-Stocks} / \text{Obligations}$

Or  $rsi = \text{Current asses-Stocks} / \text{Current liabilities}$  normal value 0,65 – 1.

- **global solvability ratio** (rsgl)  $rsgl = \text{Total Assets} / \text{Total Libilities}$

The net situation can indicate a negative situation as a result of the conclusion of the previous exercises with a loss, its own capitals being fully consumed, the value of debt being higher, meaning that the company is insolvable

<sup>1</sup> Ion Verboncu, Ion Popa, Company's diagnosis – theory and applications, Editura Tehnică, București, 2001, p.47-50.

Starting from the economic concept regarding the accounting balance sheet a **functional balance sheet** can be constructed. Under a financial aspect the functional balance sheet can be converted into a **financial balance sheet**.

The analysis of the financial balance using the functional balance sheet insures the establishment of the indicators: trading capital, the needed trading capital; net treasury.

a) **The trading capital (FR)** expresses the balancing of the investment function from stable investments or the turn to exploitation resources, that is short term loans. This results into the following relation:

$$F_R = R_S - U_S$$

where:

-  $R_S$  – represents stable resources and  $U_S$  – stable uses

- If  $R_S > U_S \Rightarrow F_R$  positive

It results a fully covering of the tangible assets from stable resources as well as the possibility of covering one part from the exploitation needs, there is a security margin that places the company to a shelter from other unforeseen events.

- Then when  $R_S < U_S \Rightarrow F_R$  negative

The insufficiency of the trading capital represents a clue of the insolvency risk, that is bankruptcy, because it places the company in a dependent relation towards banks that may or may not give or renew bank credits needed to finance the stable uses, and it endangers the payment capacity and the current treasury of the companies.

b) **The needed trading capital from the exploitation activity (NFR)**. The needs of financing the production, respectively of the exploitation activities are mostly covered from temporary sources (debts from exploitation that is suppliers, creditors, short term bank credits, etc.).

This comes from the following relation:

$$NFR = UE - RE$$

Where:

-  $UE$  represents the uses from exploitation that is stocks + debts and  $RE$  = debts from exploitation

• If  $UE = RE \Rightarrow NFR = 0$ , it results that the solvability on short term is ensured, but the balance is fragile, not cashing the debts determines a risk, respectively an insolvability.

- In the case of:  $UE > RE \Rightarrow NFR$  positive. This means.
- Either a surplus of temporary needs in relation to the temporary sources possible to be tangible if it is the result of an investment policy regarding the increase of the financing need from exploitation activities,
- Either a non-favourable difference between the liquidity of stocks and the debts and the exigibility of exploitation debts, meaning the payments have been made urgent and the cashing in have been slowed down.

From the point of view of the insolvency risk the company is in a favourable situation and is able to pay the due obligations and has a plus of potential liquidities.

- If  $UE < RE \Rightarrow NFR$  negative

This means a plus of exploitation sources in report with the needs. It is a positive fact if it is due to the increase of the assets and assuming debts with more relaxed payment deadlines, the increase of the debts cash-in or a negative aspect if it is a result of the non-supply with stocks. In this case the company does not have any liquidity to pay for its obligations and is in a risky situation.

The use of the trading capital to determine the **bankruptcy risk** supposes that the financial balance is complied with if:

- Tangible asset = permanent capital
- Current asset = Short term obligations

c) **Net Treasury**, the cash flow cash-flow (TN). If at some time the trading capital is higher than the need of trading capital ( $FR > NFR$ ), the excess of financing is found under the form of net treasury, like money in pay offices and banks as well as in short term financing such as shares, obligations and investment securities. It is established thru the relationship:

$$TN = FR - NFR$$

The liquidity rates used the most are:

a) **General liquidity rate** ( $R1_g$ ) that compares the total current asset potential liquidity (Uses < 1 year) to the entire due debts under 1 year (Resources < year)

b) **Partial liquidity rate** ( $R1_p$ ) reflects the company's capacity to pay for her short term debts, so debts and liquidities.

**Immediate liquidity rate** compares the money available to the short term debts ( $R1_i$ ) If it is < 1 it means payment difficulties.

The static analysis of the bankruptcy risk done based on the balance sheet is completed by the dynamic analysis, starting from the funds flows determined both by the exploitation operations as well as by the capital and presented in the financing table. Therefore we use the following **indicators**:

a) **the treasury excess of the exploitation** (ETE) represents the excess of the treasury, resulted from the exploitation activity. It measures the capacity to cope with the investments' needs of self financing and reimbursement of the financing debts, including tax payments and dividends resulting from the relation

$$ETF = EBE - \Delta NFR$$

where:

- EBE = gross exploitation excess

- EBE = (cash-in income + income to be cash-in) - (paid expenses + expenses to be paid)

-  $\Delta NFR = NFR_1 - NFR_0$

where  $\Delta NFR$  = the variation of the trading capital need

-  $NFR_1, NFR_0$  = the need of trading capital at the end of the period, or at the beginning of the period.

b) **Self-financing capacity** (CAF) expresses the company's capacity to self-finance herself from own resources resulting from the relation:

$$CAF = EBE - \text{Financial expenses} - \text{Tax on profit}$$

c) **Self-financing (A) results from:**

$$A = CAF - \text{Dividends} \quad \text{Self-financing} > 0,5 \text{ is good}$$

d) **Cash-flow (CF)**

$$CF \equiv CAF$$

The use of the ration method in detecting the company's financial difficulties represents a traditional way to analyses the financial situation, and it allows:

- a valuation of the management performance;
- a consideration of the financial health state of the company;
- realising some predictions on the financial situation of the company.

The bank methods propose the early determination of the vulnerability and the bankruptcy risk by means of some synthetic risk notes obtained by statistic methods of discriminative analysis that allow the determination of some score function whose value classifies companies in vulnerable and healthy. The most used method in the developed countries in order to develop a company's situation is based on the "Z" scores model, developed in USA in 1968 by **E.J. Altman**. He discovered that the analysis based on several variables, done with the help of five indicators allowed a foreseeing of 75 % of the bankruptcies two years before they have been produced:

The function of this model is:

$$Z = 3,3 R_1 + 1,0 R_2 + 0,6 R_3 + 1,4 R_4 + 1,2 R_5,$$

where:

$R_1$  = gross exploitation excess (profit) / total asset,

$R_2$  = Turn over / Total asset,

$R_3$  = own capitals / total debts,

$R_4$  = reinvested profit / total asset,

$R_5$  = current asset / total asset,

The bankruptcy risk by the ALTMAN model can be interpreted as following:

a)  $Z < 1,81$  - the company is insolvable, the bankruptcy condition being imminent;

b)  $1,81 < Z \leq 2,90$  - the company is in difficulty, it reaches the bankruptcy stage.

c)  $Z > 2,90$  - the company is healthy, solvable.

The model applies especially if there is a stock exchange market.

**J.Conan and M.Holder model** was elaborated in 1979 for small and medium companies on a sample of more than 190 industrial companies, amongst which half went bankrupt between 1970 – 1975.<sup>2</sup>

The proposed score function is:

$$Z = 0,24R_1 + 0,22R_2 + 0,16R_3 - 0,87R_4 - 0,10R_5T$$

The ratio taken into consideration to determine the “Z” score do not in all cases have the same content. Some authors take into consideration the importance of the permanent capital in the total asset or in the total passive ( $R_2$ ); the available share and the values on short term into the total assets, the relative liquidity rate, the immediate solvability ( $R_3$ ), etc

The ratio for industrial companies according to the authors definitions are the followings:<sup>3</sup>

$R_1$  = profitability towards creditors = gross exploitation surplus / total debts,

$R_2$  = solvability = own capitals / total passive,

$R_3$  = liquidity = available and realized values on short term / total passive,

$R_4$  = financial expenses rate = financial expenses / turn over,

$R_5$  = the rate of the expenses with the personnel = / added value

The bankruptcy risk, by the Conan and Holder model applied to industrial companies is situated:

$Z < 4$  - unfavourable zone, so there is a bankruptcy danger, probability ( P ) > 65 %

$Z = 4 - 9$  - uncertainty zone,  $30\% < ( P ) < 65 \%$

$Z \geq 9$  - the company is solvable. ( P ) < 30 %

Compared to the foreign literature predictions regarding bankruptcy, the interest of the specialists and practitioners in Romania has been manifested a little bit later. We notice that in the year 1996, the model Măneacă C. and Nicolae M. Proposed for the metallurgical industry and later on the model “B” – Băileşteanu , model I – Ivoniciu.

Starting from the literature studies in the foreign literature from the national bibliography it is mentioned that the stages that signal the apparition of the bankruptcy are:<sup>4</sup> the impossibility to pay current obligations; the lack of financial resources to reimburse the debt; delayed cash-in of the price of the finite goods; lack of profit.

Starting from these facts a bankruptcy function has been built “B” using four indicators:

$G_1$  = current liquidity  $G_2$  = Solvability  $G_3$  = rotation speed of the clients’ credits

$G_4$  = Profit rate

<sup>2</sup> Gh. Băileşteanu, *Diagnosis, risk and efficienc in business* Editura Mirton, Timisora 1996, page.290.

<sup>3</sup> Conan și Holder “ Variables explicatives de performances et controle de gestion, dans les P.M.I.” Universite Paris Dauphine, 1979, citat de I. Anghel – Op. cit. Editura Economică, București, 2002, p.73

<sup>4</sup> Gh. Băileşteanu, *Diagnosis, risk and efficienc in business* Editura Mirton, Timisora 1996., p.295 – 296.

Using the utilities theory the linear function for each indicator is:

$$f(x) = ax + b$$

The parameters „a” and „b” are calculated with the relations:

- for indicators that optimise through maximum;

$$a = \frac{1}{X_{\max} - X_{\min}}; \quad b = \frac{-X_{\min}}{X_{\max} - X_{\min}}$$

- for indicators that optimise through minimum;

$$a = \frac{1}{X_{\min} - X_{\max}}; \quad b = \frac{-X_{\max}}{X_{\min} - X_{\max}}$$

where  $X_{\min}$  = the minimum value of the indicator (bankruptcy state)

$X_{\max}$  = indicator's value when the bankruptcy risk is minimum.

**Determining parameters „a” and „b” can be presented in table 2.11**

Table 1

Determining parameters „a” and „b”No.	Indicators' denomination	Symbol	Value		a	b
			min	max		
1.	Current liquidity	$G_1$	0.75	3	0.444	-0.333
2.	Solvability	$G_2$	0.9	2	0.909	-0.818
3.	Rotation speed of the clients; credits – rotation duration in days	$G_3$	5 70	24 15	0.0526	-0.263
4.	Profit rate	$G_4$	0	30	0.0333	0

The data in the above table allow the writing of a prognosis function of the bankruptcy in the case of the model “B” which is the following:

$$B = 0,444G_1 + 0,909G_2 + 0,0526G_3 + 0,0333G_4 - 1,414$$

The function takes a maximum value of „4” and a minimum one of „-1,4”<sup>5</sup>, and in relation to the value of “B” there are the following zones:

$B < 0,5$ - imminent bankruptcy

$0,5 < B < 1,1$  - limited zone

$1,1 < B < 2$  - intermediate zone

$B > 2,0$  - favourable zone

## CONCLUSIONS

In conclusion, by calculating the exploitation risk, the financial risk and the bankruptcy risk we can appreciate if the company's activity is solvable, if the bankruptcy is imminent or if its activity is situated in a dangerous zone, being in difficulty and being able to cause bankruptcy. Therefore it is useful to determine depending on the sure conditions, starting from the branch statistics or the sectorial ones, synthesis rates on each sector so that they can be used in appreciating the concrete situations the company is in. The causes that may take to bankruptcy are numerous and they target: reducing the activity; reducing the margin and profitability rates; the apparition and the amplification of the treasury, management problems, bankruptcy of some clients, etc.

<sup>5</sup> Gh. Băileșteanu , *Diagnosis, risk and efficienc in business* Editura Mirton, Timisora 1997 , p.294 – 296.

The study of the bankruptcy causes led to the conclusion that it is not a brutal phenomenon, but it is a result of a progressive degradation of the financial situation of the company, the risk of insolvability being foreseen years before the ceasing of the payments.[1]

The ten menaces in case of non valuating the risk:

1. Wrong positioning of the business.
2. Too much capital in the tangible assets.
3. Lack of capital.
4. Problems with the credits.
5. Bad management of the stocks.
6. Uncontrolled expansion. Goods are launched on a market that hasn't been previously studied.
7. Inappropriate capitalisation.
8. Lack of experience and qualification.
9. Problems with the personnel.
10. Bureaucracy

The specialists have analysed the factors that determine the success of a company's activity. They consider that if we pursue the accomplishment of some conditions, the performance is insured. The established conditions are:

1. Tendency to action. Each employee is able to act every day without waiting for order from anybody else.
2. Close approach to the client to understand his needs. The production activity must have a double sense: obtaining a highly quality good and satisfying the needs of a certain consumer segment.
3. Autonomy in taking decisions. All the activity must be divided into compartments that know exactly what they have done and where decisions are taken.
4. Simple management based on values.
5. Accomplishing the target or "knitting of the right model". The idea is that a new product is launched only on a known market and on the new market only a known product is sold. We never launch a new product on a new market, because the risk is very high.
6. A well trained and dedicated personnel. The activity supposes a chain of people involved into the production process starting with the initial supplier to the final client. If each person is interested into the activity he performs and if one does a quality work, the risk of some interruptions into the production process is very low.
7. A very short control of the activity. We should not neglect any aspect of the control in any of the activity's stage.

Any manager by continuously analysing the activity can ensure the business' success by talking into the consideration the facts mentioned above.

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