THE ANALYSIS OF PERFORMANCES AND RISKS IN THE COMMERCIAL SOCIAL ACTIVITY

ANALIZA PERFORMANȚELOR ŞI A RISCULUI ÎN ACTIVITATEA SOCIETĂȚILOR COMERCIALE

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Abstract: *Many investigators and financial bodies have been dealing in elaborating prediction methods of bankruptcy risk. A proper model for the Romanian economic conditions is the one elaborated by the Romanian Commercial Bank, where a decisive role is played by the economic and financial performances. The evolution in time of these indicators contributes to detect the weak and strong areas of the company and then to establish a score by attributing a weight to each ratio.*

Rezumat: *O serie de cercetatori si institutii financiare au incercat elaborarea unor metode de previziune a riscului de faliment bancar. Unul dintre modelele aplicabile conditiilor economice din Romania este cel realizat de Banca Comerciala Romana, in care un rol central este detinut de performantele economice si financiare. Evolutia in timp a acestor indicatori contribuie la detectarea domeniilor slabe si puternice ale companiei si mai apoi la stabilirea unui scor prin atribuirea unei valori fiecarui raport.*

The evolution of any company occurs under the conditions of technological changes. The achievement of technical advance supposes a massive infusion of capital, besides a performing management.

The bankruptcy risk was and is under managers' attention. They are interested in the good going of the production cycle and the investors in recuperating the respective credits and interests. Many investigators and financial bodies have been dealing in elaborating prediction methods of bankruptcy risk. The manner used is the statistical technique of analyzing the financial features of normally functioning societies and of the companies with difficulties in economic and financial administration. All analysis models of the bankruptcy risk have at their basis a score function according to which it is determined with approximation whether the company would get bankruptcy or would have performing economic results, in a period immediately following the analysis (Pahone, 2005).

The selection of the rates is carried out on the basis of the factorial analysis of the main components, after which a score function is determined through the method of multiple differences. Independent between them, the rates (ratios) eliminate the risk of recording within the score function, certain repeated influenced of the same phenomenon. The optimum level minimizes the classifying errors of the companies. Within the western economic practice, a series of models based on score function have been elaborated; among them, the best known are: Altman model; Conan and Holder

models; the model of the Central of Balance Sheet of the Bank of France; the model of Romanian Commercial Bank.

Altman model of estimating the bankruptcy risk

Through the discriminatory analysis of the rates, E. Altman (Altman, 1968) revealed the possibility of a collective using of selective indicators in predicting bankruptcy and elaborated an index of bankruptcy by the weight of the following selective indicators:

X1 = Working capital / Total assets

X1 is a measure of company's flexibility and reveals the weight of the working capital in the total assets. Large values of this report points out to the efficient use of working capital.

X2 = Reserves / Total assets

X2 is a measure of the inner financing capacity of the company, an as high value as possible being recommended.

X3 = Gross Profit / Total assets

X3 represents the ratio of efficiency in using the assets, an as high value as possible of this ratio being recommended.

X4 = Equity Capital / Debts in the long term

X4 represents the degree of debts of the company through long term loans.

X5 = Total turnover / Total Assets

X5 represents an indicator of the efficiency of the assets, the rotation of the total asset through the total turnover respectively.

The bankruptcy index is represented by the composed financial variable (Z sector), calculated as an average sum of several financial characteristics of the company:

$$Z = 1.2\,X1 + 1.4X2 + 3.3X3 + 0.6X4 + 0.1X5$$

If one introduces the numerical level of the financial characteristics X, specific to the analyzed company, into the score function, two cases are possible:

- If $Z > 2.675$ the company is not menaced of bankruptcy, therefore it has available a sound financial situation;
- If $Z < 2.675$ the company is exposed to bankruptcy, due to a precarious financial situation.

According to Altman's opinion, the decline of a company advances five stages (Ciolacu, 1996):

- The appearance of the signs of decline, what, in many cases, are disregarded: the decrease of profitability, the decrease of the total turnover and the increase of debts and the decrease of liquidity;
- The existence of the clear signals for which no measure are adopted hoping that they would disappear without intervention;
- Powerful action of declining factors with aggravated financial situation;
- The collapse and the managerial team's impossibility to act through correction measures;
- The intervention, either through recovering measures, or bankruptcy declaration.

The indicators used in calculating significant ratios for Altman model in S.C. "X" S.A. (thousands lei) are shown in table no. 1.

Table no. 1: The indicators used in calculating significant ratios for Altman model

Indicators	**2007**
Revenue assets	1,046,405
Total assets	1,738,938
Debts under 1 year	522,797
Total debts	667,867
Equity capital	1,035,797
Reserves	414,796
Total turnover	1,214,950
Gross profit	160,775

Based on these data, the Altman ratios of S.C. "X" S.A. are calculated in table no. 2.

Table no. 2: **The Altman ratios are calculated on the indicators from table no. 1.**

Ratio	**2007**
X1	0.0830
X2	0.2385
X3	0.0924
X4	7.1399
X5	0.6986

The score function associated to these data has the value $Z = 5.09126 > 2.675$ that shows that the company's financial situation is possibly recoverable in 2007.

This Z function is very sensitive to noteworthy changes of the company's situation and draws the attention upon company's economic and financial state. This model provides prediction possibilities of remarkable quality, Altman model classifying 95% a year ahead the bankruptcy companies, the bankruptcy in 72% two years ahead and 30% five years ahead.

The analysis of the contribution of the ratios for the score function brings in a complex of information that allows the attention drawing of the decision makers department of the company with companies from the same branch and contributes in estimating the conjectural character of a given situation.

Conan-Holder model of predicting bankruptcy risk

Conan-Holder elaborated a discriminating analysis model through which the probability that a company can reach a bankruptcy status is determined. The respective score function of this model is made peculiar according to the branches of activity and is applied to the industrial companies with 10 – 500 employees. The model was made in 1978 by observing 31 ratios in a sample of 190 small and middle enterprises, 50% of which got bankruptcy between 1970-1975 years. For industry, the score function has got the following formula:

$Z = 0.24X1 + 0.22X2 + 0.16X3 - 0.87X4 – 0.10X5$ where:

X1 – gross outcome of exploitation / debts;

X2 – permanent capital / total assets;

X3 – achievable and available values / total assets;

X4 – financial expenditures / total turnover;

X5 – personnel expenditures / total turnover;

Conan-Holder model has remarkable results in predicting the evolution in the short run of the western economic environment (Mereuta, 1994); it can be applied in our country only under the conditions of legal bankruptcy and annulling masked subventions, though the small number of the ratios included is a disadvantage within the context of Romanian realities.

The bankruptcy probability is established according to the value of the score function as the data are shown in table no.3.

Table no. 3: The bankruptcy probability is done on the value of the score function.

Score function (Z)	**The probability of bankruptcy (of industrial enterprises)**	
Negative 0-2 2-4	> 80% 75–80% 70-75%	Zone with an increased risk of bankruptcy
4-8.5	50-75%	Uncertainty zone
9.5 10.0 13.0 16	35% 30% 25% 10-15%	Zone with a low risk of bankruptcy

The data used for the analysis of the bankruptcy risk of S.C. "X" S.A. by Conan-Holder method are systematized into the table no. 4 and table no. 5.

Table no. 4: The Conan-Holder method.

Indicators	**2007**
Revenue assets	1,046,405,336
Inventories	221,405,267
Total assets	1,738,938,792
Permanent capital	434,281,550
Financial expenditures	35,487,004
Personnel expenditures	275,200,990
Total turnover	1,214,950,516
Added value	34,627,964
Surplus of exploitation	126,427,398
Total debts	667,867,407

The main ratios of Conan-Holder model are shown in table no.5.

Table no. 5: The main ratios of Conan-Holder model.

Ratio	**2007**
X1	0.2407
X2	0.2497
X3	0.6986
X4	0.0292
X5	0.2265

Replacing in the score function formula we obtain the following value: Z = 0.1763, which, in the model of Romanian economy, is pessimistic due to the fact that the re-estimation super-dimensioned the total assets and the bank loans in the average and long term. Since that in Romanian companies is atypical, the Conan-Holder model points out a very high bankruptcy probability.

The score function value, Z respectively, taken according to table no. 5 for 2007, indicates the fact that the company is in an area of high bankruptcy risk of over 80%.

The comparative application of Altman and Conan-Holder models in the analyzed society resulted in divergent outcomes due to the non-typical phenomena that manifest in the Romanian economy of transition.

The model of Romanian Commercial Bank in estimating the bankruptcy risk

The Romanian theoreticians appreciate (Stancu, 1994) that the score function cannot be used for the Romanian companies due to their specific characteristics. A proper model for the Romanian economic conditions is the one elaborated by the Romanian Commercial Bank, where a decisive role is played by the economic and financial performances.

In order to estimate the companies in Romania, some specific models are recommended to be used and they are used as a calculation basis as data reported by the companies in the accountancy balance sheet. The economic and financial indicators taken for calculation within this model are (Bran, 1994):

1. *Patrimonial liquidity:*

in which:

RA – revenue assets

I_{wpe} - inventories without possibilities of evaluation;

C + L - credits and other loans;

L – losses;

D - debts;

A_{st}, L_{st} - assets and liabilities on short term.

2. *Solvancy:*

Ec - Equity capital;

TL -Total liabilities

3. *Financial return:*

Pb - Profit before taxation;

Ec - Equity capital.

4. *Rotation of revenue assets:*

TT - Total turnover;

RA – Revenue assets.

5. *The dependence on supply and selling markets:*

In practice, the following situations appear:

At > 50%; De > 50%

Ai > 50%; De > 50%

At > 50%; Dt > 50%

Ai > 50%; Dt > 50%

where:

At = Supply from the country;

Ai = Supply from imports;

De = Sales to export;

Dt = Sales inside the country.

6. *Guarantees* that may consist of:

a) Deposits in lei / currency;

b) Plegdes, mortgages;
c) Wares purchased with credits;
d) Cession of claims.

The analysis of the company's economic and financial performances is carried out according to the above mentioned criteria with points for each criterion. Based on Romanian Commercial Bank (RCB) grill, any company may enter one of the categories given in table no. 6.

Table no. 6: Categories established on the basis of RCB indicators.

Category	Points	Economic situation
A	Over 20	Very good, credits may be given
B	16-20	Good, credits may be given
C	11-15	Balancing, shows high risk
D	6-10	High risk, without guarantees for credit giving
E	0-5	Company in a very precarious financial situation, no guarantees for credit giving

The companies that accumulate over 16 points (categories A and B) show a good economic and financial situation and consequently, a credit is recommended. The ones that accumulated 11 – 15 points show a high degree of risk, a possible credit implying a relatively high risk premium. These companies will have to be followed up from the point of view of solvability aiming of adopting measures for credit recuperation at the first signs of distrust. The D and E categories do not show sufficient guarantees to be given credits.

The studies carried out by W.H. Beaver (Beaver, 1967) and E.I. Altman (Altman, 1968) revealed the fact that a synthetic indicator consisting of a battery of ratios allows an early detection of the difficulties of a company and, consequently, facilitates preventing measures at the first sign of vulnerability.

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