



Emerging Markets Queries in Finance and Business

## Diagnostic model of the risk of bankruptcy

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### Abstract

In Romania, on the background of the economic crisis and globalization of markets, the external and internal environment becomes more and more hostile and as such, many commercial societies, can record financial disturbances or even bankruptcy. Ignoring drawn signals (the level of some economic-financial indicators) following a correct diagnosis can lead to degradation of economic and financial condition of the company entering insolvency. The study conducted by the author, on a guided sample of small companies in Romania aimed to develop a model of financial diagnosis, which can quickly reflect, based on the level of a score, the probability of the insolvency or bankruptcy of the company.

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### 1. Introduction

In this period, marked by political, economic changes, fierce competition from foreign companies and so on, the company is becoming more vulnerable and exposed to higher risks.

As such, the diagnosis of companies, with a view to the elaboration of present and future decisions, is increasingly required. In most of the cases the diagnosis of the trading companies is acclaimed only when the company is in financial difficulty; however, companies with a responsible management uses this tool continuously, even when their financial performance is high.

On the basis of the study, it emerged the main causes that led to the entrance in insolvency or bankruptcy of the analyzed companies. These are external causes (external competition, rising raw material prices, the disappearance of foreign markets, low incomes for people, etc.) [Edward I. Altman, 2007, p 6] and internal causes (unsatisfying management, equipment no longer complies with the technical point of view, outdated

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technology, research, etc.). All these causes have a direct influence on the Treasury (cash in hand and cash in bank accounts plus short term investments). The failure to pay these debts at the due date will generate pressures from those who should collect them, having chronic implications in the economic-financial situation. Existing money at a time can be explained not only by the available accounts (receipts, payments), but also by the data presented in the balance sheet and profit and loss:

$$\text{Cash in hand and cash in bank} = [(\text{NP} + \text{OCAR}) + \text{LD} > 1 \text{ year} + \text{CD} < 1 \text{ year}] - \text{FA} - \text{NWC} \quad (1)$$

Financial performance

Funding from own sources and borrowed investment needed to exploitation

Where: NP- Net profit; OCAR- Other capital and reserves; LD>1year- debts paid over a year, CD- debts paid during a year, FA - fixed assets, NWC- need for working capital

Based on this equation, the funds available (Cash and bank accounts) at any given time is the result of financial performance (NP), policy of distribution of dividends (retained earnings), policies of investment (Fixed assets), an policy of circulating assets management ( $\Delta\text{NWC}$ ), and policies to their financing ( $\text{OCAR} + \text{LD} > 1 \text{ AN} + \text{CD} < 1 \text{ year}$ ).

## 2. Method

Studies conducted so far, reveals the fact that the economic and financial condition of a company is determined by both financial factors and the factors of non-financial kind [Fengyi Lin, 2010, p.3]. The factors of non-financial nature, will ultimately determine the alteration of a financial nature.

In consequence, financial performance, financial position, cash flows are the result of efficient management of human, technical, financial resources, or commercial relationships good customer (market share) and suppliers etc. Financial information can be known by any interested person through the annual financial statements, which are mandatory and are published by all the entities in Romania [OMFP 3055V/2009]. The method used in the conducted study, suppose the calculation of a score on the basis of selected financial rates.

Financial diagnosis presented is focused on those financial installments, which indicate the profitability (economic), risk (operational, financial, bankruptcy), liquidity (liquidity, solvency, cash flows).

In the study, the risk of bankruptcy is analyzed both in a static manner (balance sheet and profit and loss account) as well as dynamic (balance sheet and profit and loss account)

## 3. Results

The score is obtained on the basis of 6 indicators selected by the author from a group of several indicators. One can appreciate that between certain rates there is a strong link, as demonstrated by the values of the multiple correlation coefficient. But the need for a more detailed analysis of return, risk and liquidity and an easier interpretation of the score obtained, justifies the use of these indicators. The study conducted involved several steps.

The first stage of the study implied a retrospective and present economic-financial analysis on a sample composed of 34 companies that were under the following circumstances: financial difficulty; having a normal economic and financial situation; or having a very good economic and financial situation. As a result of the analysis process the main causes that generated these situations were outlined.

The second phase of the study implied the selection of by the author, of some rates considered to be representative to highlight the financial performance, the financial balances, the payment capacity, the risks etc. The arguments that formed the basis for the selection of these rates were:

- a) as first argument, the causes which determine the financial imbalances and possibly the bankruptcy;

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