	K2	0.20	0.16	0.12	0.08	-0.10	0.20	is going to be permanent
	K3	0.70	0.74	0.74	0.78	0.80	0.85	
D	K1	1.32	1.34	1.32	1.21	1.32	1.30	temporary insolvency
	K2	0.21	0.23	0.21	0.11	0.21	0.20	
	K3	0.64	0.66	0.64	0.74	0.64	0.85	
E	K1	1.32	1.30	1.26	1.24	1.20	1.30	the insolvency is going to be permanent
	K2	0.21	0.19	0.18	0.16	0.12	0.20	
	K3	0.64	0.79	0.85	0.85	0.87	0.85	
F	K1	1.32	1.26	1.28	1.29	1.32	1.30	temporary insolvency
	K2	0.21	0.14	0.16	0.19	0.21	0.20	
	K3	0.64	0.85	0.86	0.75	0.64	0.85	

To make it clear, I would like you to pay attention to the following table with the calculated significance of the three main indexes for five financial periods (quarters) for 6 different organizations.

As we can see, organization A is absolutely solvent, because all the indexes are within the norms. The other organizations are insolvent. Let us check the level of their insolvency.

So, the insolvency of organization B is permanent and this organization is a bankrupt because it has had bad indexes during 5 financial quarters. Organization C is facing a very difficult financial situation. It is not a bankrupt yet, but because of bad indexes (K1 and K2) during 4 financial quarters the insolvency of this organization is going to be permanent.

You can see that organization D was insolvent in the fourth period and the insolvency was temporary, because the financial situation in this firm has changed for the better.

All of these examples are very simple. Let us discuss a more difficult situation when an organization has been insolvent during three periods in succession. The dynamics of indexes' changes plays the main role in financial analysis in such situations.

For instance, we have two organizations which have been or were insolvent during three periods in succession. These are organizations E and F.

The insolvency of organization E is going to be permanent because the financial situation in this firm is changing for the worse.

The situation in organization F is the opposite. The insolvency of this organization is not permanent because we can notice positive changes in their financial situation.

This kind of analysis (financial analysis) is used only to identify the companies' present situation. To assay the future of financial situation of these companies we have to use another type of analysis (for instance – the discriminant analysis) which is based on different models and will be the best one for concrete organization.

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THE DIAGNOSIS OF BANKRUPTCY RISK USING THE DISCRIMINANT ANALYSIS

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All entities are subject to the bankruptcy risk. This risk can have negative consequences, with complex implications both on the entity's whole activity and on the other entities it comes into contact with.

The bankruptcy risk is the company's incapacity to face the due obligations resulting either from current operations, whose accomplishment conditions the continuity of the activity, or from obligatory samplings. The bankruptcy risk can also be defined as the impossibility of the companies to face a financial-banking transaction, respectively its incapacity to repay in time the borrowed amounts in the conditions established in agreement with third parties, in accordance with a loan agreement.

As a result, the process of bankruptcy risk diagnosis consists in evaluating the company's capacity to face the commitments assumed by third parties, therefore in evaluating the company's solvency.

The bankruptcy risk can be analysed from different points of view: the static analysis of the bankruptcy risk by means of the financial balance, the analysis of the bankruptcy risk by means of the functional balance and the analysis of the bankruptcy risk by means of the scoring method.

Over the last years, due to the inherent dynamism of the economic-financial activity of companies, it has become more than necessary to acquire accurate information on the bankruptcy risk in the future.

The bankruptcy risk can be analyzed in several aspects:

- static analysis of the bankruptcy risk. This method is based on the calculation of the main financial indexes
- the discriminant analysis.

The first one is used only to identify the companies' present situation. To assay the future of financial situation of this companies we should use the second one. This method is based on statistical techniques and involves observing a set of companies that consists of two distinct groups: one group of enterprises with financial difficulties (bankrupt) and a group of financial-relaxed companies (non-bankrupt).

Observation is based on the calculation of some financial ratios determined for both groups of companies. The significance of indicators and the way of combining them depend on the specific interest of each analyst. This combination of indicators forms a linear function 'z' called 'score function' determined for each enterprise. The distribution of different scores allows to separate all enterprises in two groups which were shown above.

The z-score for each enterprise is calculated as follows [1], [2]:

$$z = v_1x_1+v_2x_2+\ldots\ldots\ldots\ldots+v_nx_n \quad (1)$$

where:

$x_1, x_2, \ldots, x_n$ – independent variables,

$v_1, v_2, \ldots, v_n$ – discriminant coefficients.

The discriminant function transforms the individual variable values to a single discriminant score or z-value which is then used to classify the analyzed company.

The advantage of discriminant analysis is that many characteristics can be combined into a single score. So, to build an analysis model based on this method the following steps have to be followed [3]:

1. the analyst selects the financial indicators that best reflect the financial health of a company;
2. the evolution of the selected indicators is compared on two categories of companies within the same field of activity, some of them in distress and others financially relaxed;
3. the predictive function 'z' is developed by combining those financial ratios that have a strong and constant action;
4. the cut-off values of z-function are determined in order to establish the interpretation of the z-score that reflects the occurrence probability of bankruptcy risk.

However, there are some difficulties with the use of discriminant analysis.

First of all we have to understand that there is no any unique model which is good for all kinds of organizations of different countries. That is because of the national character of those models that have been developed for companies of concrete macroeconomic climate.

Another disadvantage is that till now, almost all z-score models use only quantitative variables (financial ratios). All the financial ratios of the models above and of models in general were obtained on the basis of certain statistical data of the activities of enterprises in different countries or regions. Therefore it can be assumed that these models can be used most effectively for a certain group of companies operating in a particular economic situation and in a particular period of time for which they were originally designed.

The discriminant analysis expectations and variances can be used in the application of mathematical tools. This means that when we calculate the integral index of the model we cannot get the true value of that coefficient, we get only its evaluation.

For solving all this problems better is proposed the following:

- the selection of z-model for the discriminant analysis should be based on the possibility of its use for the particular enterprises of concrete country in concrete period of time;
- we should use financial ratios which allows to consider all individual characteristics of the company best;
- in case, when it is impossible to use the existing model, we should invent 'alternative' one which allows us to consider the features of our local economy in the current period of time.

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