IDENTIFIYING THE BANKRUPTCY RISK OF COMPANIES WITH THE ALMAN MODEL

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Abstract
Companies operate to produce goods and services that, in turn, help the entity achieve its primary objective of gaining profits. Certain studies have been conducted to determine whether an economic entity is sound and capable of continuing its business in a normal way. There are a lot of papers in which this topic is debated, and these are proposed by different specialists. Altman is one of these authors. It has developed a model based on the financial statements of economic entities. With the help of this report, Altman could predict about 2-3 years in advance whether an economic entity is financially efficient or whether it will be on the verge of bankruptcy.
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JEL Classification: *M40*

I.INTRODUCTION

The analysis of the company crisis has been the subject of various studies, both corporate and legal, aimed at defining the situation and proposing strategic and operational solutions to overcome it, in view of the protection not only of creditors, but also of all the bearers of interest (stakeholders), ie those who hold with it working or collaborative relationships or that, in general, express the interest for the company to remain on the market and continue to perform its economic function. Over the years, literature has tried to analyze the phenomenon relating it to the issue of reorganizing the company. In this context, the concept of crisis is based on the assumption that the company inevitably faces periods of crisis during its life and, therefore, in order to achieve the goal of survival, it must prepare appropriate management tools for the start of the crisis. and to maintain a constant process of rehabilitation (Davoni, 2003).

Events that have taken place over the last quarter of a century have led to an increase in the interest of researchers in the economic sphere in terms of major financial imbalances. The study of financial crises was debated in specialized papers even before World War II, but after this event, studies in this field increased significantly. A major impact in determining the specialists to make predictive bankruptcy models was the Great Economic Crisis that took place between 1929-1933. During this period there was a dramatic decline in the world economic activity. Among those who have been interested in this area and who have proposed some models by which we can predict whether an economic entity will end up in bankruptcy or not we could remember: Beaver (1966), Altman (1968), Argenti (1976), Conan & Holder (1979) and many others (Sylla, 1991)

In our country, the concern about bankruptcy is highlighted in the works of the following authors: Mănecuţă and Nicolae (1996), Băileşteanu (who set out to predict bankruptcy modeling from models proposed by Altman, Argenti, Conan & Holder, 1998), Ivoniciu (1998), Anghel (2002); (Mates et al. 2008).

What plays important role in a company, in the conduct of economic activity is time (Socoliuc and Tulvinschi, 2008). It makes the difference between successful and failing companies, between the viable and non-viable ones. If a firm performs its business in a normal way over a long period of time, it can be said that it is managed by capable and specialized owners and that the field of activity in which it operates is a long-term one. In order for a firm to go bankrupt, it must work for a period of time, have some debt-related activities, and then lenders to notice that the entity with whom they interact has financial problems and they in their turn to begin pre-bankruptcy proceedings (Anghel, 2002).

Conventional theory expresses the fact that most companies follow a certain pattern of growth from the moment of their establishment to their maturity. This demonstrates that a firm grows steadily as it manages to gain financial strength and maturity. In our country, the problem of insolvency is quite present given that there

are a large number of professionals who face this problem. Figure 1 shows the number of economic entities that entered the insolvency state in 2011-2017.

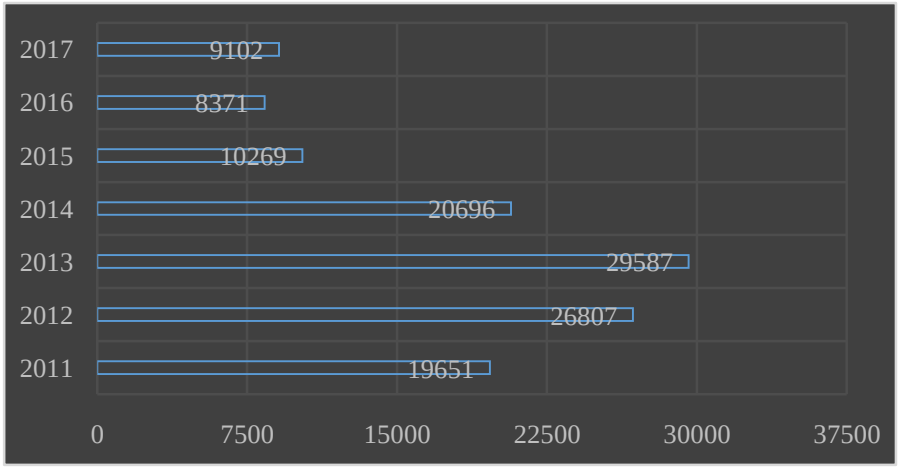

Figure 1 - Number of companies entering the state of insolvency
Source: Own work after: https://www.onrc.ro/index.php/ro/statistici?id=252

As it can be seen in Figure 1, the year when the largest number of insolvency firms was recorded is 2013, i.e. 29587 economic entities.

In light of this, the theory proposed three types of rehabilitation that correspond to the same number of operational processes, with the relative relations with the stakeholders; they are:

- internal reorganization through the use of company resources and the suns internal stakeholders;
- reorganization through the involvement of external stakeholders;
- the reorganization involving the judicial or administrative authority,

to be implemented through bankruptcy insolvency procedures (Davoni, 2003).

Business continuity is based on the restoration of financial equilibrium, to be implemented through more or less radical reformulation and / or debt reduction, the granting of specific rights on equity and access to "new finance", that is, transactions refinancing of companies in crisis. In this way, insolvency becomes secondary with respect to the trust that creditors give back to the business (Guatri, 1986).

The value of the company, in fact, as seen, tends to rapidly decrease in a crisis situation, so keeping this situation without intervening could generate negative effects on the level of trust of the stakeholders to the company, causing a reduction in value economic activity (Socoliuc, 2016; Socoliuc and Grosu, 2016; Bostan and Grosu, 2011). Based on these principles, it is possible to outline several useful tools a face the crisis situation according to the phase of the crisis; the basic decision, as we will see further below, is the one concerning the choice between starting a consolidation process aimed at business continuity or proceeding with the liquidation of the company (Gherubini, 2011).

This significant increase of the economic entities that entered the state of insolvency is due in particular to the fact that this year saw a significant increase in the number of entities compared to the previous year in the following fields: education (53.85%), production and supply electricity, heating, gas, hot water and air conditioning 103.45%), agriculture, silviculture and fishing (36.36%). In Figure 2 we have presented the months, from the analyzed period 2011-2017, where insolvency claims were filed.

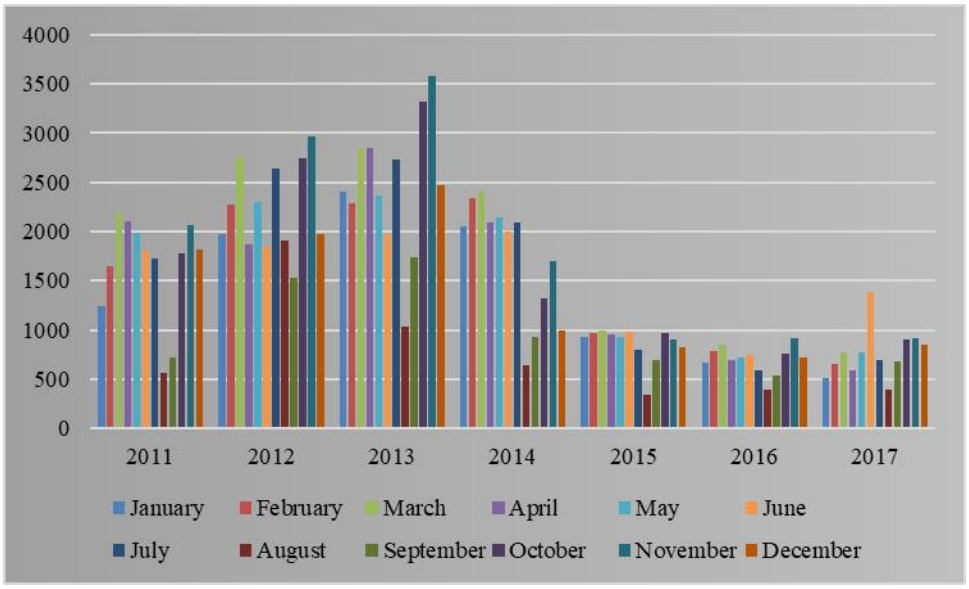

Figure 2 - Professionals entered into insolvency
Source: Own Processing by: https://www.onrc.ro/index.php/ro/statistici?id=252

In the figure above we can see that in 2013, the months in which the highest values of the companies that entered the state of insolvency were in October with a value of: 3323 and November with a value of: 3576.

II.LEGISLATIVE FRAMEWORK IN ROMANIA ON BANKRUPTCY

In our country, bankruptcy is governed by Law No. 85/25 from June 2014 on insolvency and insolvency prevention procedures. According to this law, insolvency is the situation of the patrimony of the society characterized by the fact that the company does not have enough money resources to honor its certain, liquid and eligible obligations. The persons who participate in this procedure are those creditors who have a claim on what the debtor holds. Creditors who make a claim demonstrating that they have a claim on the debtor, and this is subsequently approved, at the moment the creditor is assigned the rights and obligations arising from the insolvency law. They may lose that quality if they do not file the respective request for proof of the claim, they may be excluded from the creditors' tables or by the fact that the debtor closes the insolvency proceedings. The debtor's employees have the status of creditors without filing the claim. An entity enters into the state of insolvency when it fails to pay its debt to one or more creditors after 60 days of maturity, and it is certain, liquid and chargeable. The insolvency situation is certain when it is proven that the debtor will no longer be able to cover the previously committed obligations with the liquidities available to him at the time of maturity (Law no.85/2014).

According to Beaver's definition, bankruptcy is defined as "the inability of a firm to settle its debt at the due date. From an operational point of view, the firm is in a state of bankruptcy when it is unable to repay its bank loans or bond loans in parallel with the withdrawal of sponsors' support, non-payment of dividends to preferential shares " (Ion, 2002). Practically, bankruptcy is present when the debtor's assets are capitalized in order to cover their obligations and then the entity is removed from the Trade Register.

From what we have presented up to now, we can say that when an economic entity is in a state of insolvency, it has the opportunity to recover by reorganizing the business and thus it can pay off its debts. If the firm fails to reorganize its activity, it goes into the last stage, the one of bankruptcy (https://blog.reinventconsulting.ro/2016/08/diferenta-insolventa-faliment/).

III.COMPARATIVE STUDY OF BANKRUPTCY PREDICTION MODELS

The primary objective of any business is to generate profit. The suspicion that an enterprise might normally carry out its business or that its activity will end in bankruptcy has led to the emergence of numerous theories of predicting this. It is very interesting for researchers to find solutions to help them predict whether an enterprise will be able to continue working normally or dissolving. Since there have been and still are many firms in this state of bankruptcy, this has led to the development of many bankruptcy prediction studies. The

study by Fitzpatrick (1932) has led to the identification of stages through which we can tell whether an economic entity is heading for failure Siddiqui, 2012. These are highlighted in the figure below:

Figure 3 - Steps in identifying business failure
Source: Own Processing by: Siddiqui, 2012

Incubation is the situation represented by the fact that the economic entity is in the state of financial development. The financial distress is present when the entity's management becomes aware of the financial difficulty of the company. Financial insolvency occurs when the firm cannot dispose of the necessary funds to meet its obligations. In case of total insolvency, the entity's liabilities exceed physical assets. Finally, confirmed insolvency occurs when legal action is taken to protect creditors or liquidate the firm. A very important argument and the fact that at the time of the declaration of bankruptcy, in the bankrupt's estate can be found intellectual property rights of which the bankrupt is the owner and rights to use intangible assets of third parties (Cosmulese, 2015; Cosmulese et al., 2016; Mates et al., 2016).

Bankruptcy prediction models are numerous and can be grouped into two structures: quantitative models (the resolution of which is possible on the basis of published financial information) and qualitative models (based on a series of information within the economic entity). We can say that both structures try to identify financial or non-financial factors and they can be used in identifying companies that will survive in time and those that will fail.

Author	Year	Predictive bankruptcy model	Dependent / independent variables	Analyzed period	Sample	Result
Beaver	1966	The author relied on the average financial ratios and his theory that the firm is a liquid reservoir	Cash-flow / total assets Net profit / total assets Total debt / total assets Current liquidity	The last 5 years before bankruptcy	79 bankrupt firms and 79 non-bankrupt firms	The cash-flow debt ratio is the best predictive bankruptcy instrument followed by the level of return on assets
Altman et al.	1977	The author took into account a number of 22 variables that he grouped into five categories	* Circulation / total assets * reinvested profit / total assets * Gross profit / Total assets * market value of capital / long-term debt	20 years	66 companies, 33 in each group	
Edmister	1972	In this case, the author tested four combinations of level and trend for each indicator taken into account, resulting in a total of 152 combinations		The trend recorded in three consecutive years, the average of 5-year rates.	282 companies for one year and 42 for the whole period	If you enter predictive calculus and more complex variables, then the prediction accuracy increases.
Diamond	1976	He adapted the pattern of recognizing the key features of bankrupt companies. He uses a technique to reduce information and highlight the most important information.		-	-	This predictive bankruptcy model is not highly accurate in predicting bankruptcy

Source: Author's own elaboration

IV. CONCLUSION

It is normal for companies to move between the positive phases of economic growth, financial stability, security and the negative ones, such as periods of financial instability, failure to cover losses, incapacity to pay current obligations, and much more in the course of business. When the company goes through a more delicate period and comes from a temporary situation to a stable and then a chronic one, there are clear signs that the economic entity is heading for bankruptcy. The uncertainty as to when exactly this will occur is the cause of the main quantitative and qualitative models aimed at predicting bankruptcy. In a global context of constant evolution there has been a shift from a heavily sanctioning right to bankruptcy, a law that consciously pursued the interest of elimination from the business market as well as that of creditors satisfaction, to one who, while always oriented also to protect the creditor class, admits the fresh start and favors the possibility of rehabilitation

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