

THE UTILISATION OF CREDIT SCORING METHOD IN THE FINANCIAL STABILITY ANALYSIS TO THE BEER INDUSTRY ENTITIES

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Abstract. *The analysis of the financial stability of an entity is very important in order to measure the performances of the top management and their ability to control the assets, the owner's equity and the profitability of that company. The purpose of this report is to introduce and expand the fundamental problems concerning the quantitative measurement of financial stability on the beer industry entities. In the present article, we intended to present the credit scoring method, emphasizing at the same time the limits of this method. Going deeper into the made calculations, we will analyse which indicators most affected the level of stability of the analysed companies and the consequences of the irrational use of company's resources that may lead to bankruptcy.*

Key words: *financial stability, credit scoring method, entity, evolution, consequences.*

JEL Classification: C44, L25, M41, O21.

Introduction

The concept of financial stability is a complex one and it is not a matter of luck, but rather fair and efficient management of the multitude of factors that give rise to performance of economic activities of the entity. It is presumed that while there is correct and efficient management the result would be financial stability. Thus, the problem of the financial stability evaluation and analysis has a significant importance in the field of the management theory and practice, internal planning and control of the entity.

The goal of the article is to introduce and expand the fundamental problems concerning financial stability assessment on the beer industry entities; to present the method of credit scoring that can be used to measure the financial stability, emphasizing at the same time the limits of this method.

During the research, the universal method of dialectics has been used, along with its principles: induction and deduction, analysis and synthesis, scientific abstraction, analogy, correlation, as well as the economic-mathematical, economic-statistical methods and those of economic analysis for information procession: comparison, grouping, etc. The theoretical and methodological basis of research are the primary works of the scientists from Moldova, Romania, USA, the CIS states, as well as from other states, etc.

In order to analyse the financial stability we selected 4 entities from Republic of Moldova and Romania, namely the beer sector, for which we have processed the financial statements for a period of 4 years (2013-2016). Entities in the sample fall into the category of the largest enterprises being representative of the sector they are part of.

Literature review

The concept of financial stability in Russian literature was first mentioned in the academic works of A.P. Zutzilina and A.D. Șheremet (Sheremet, 2008).

In wealthy economies, the analysis of financial stability had evolved much faster which, of course, is tied in closely with the level of economic development in Europe, USA (Achim, M., 2014).

In industrially developed countries, the issue of stability for manufacturing entities is examined primarily in connection with competition power and the probability of going bankrupt. In Western literature, a stable entity is the entity that holds significant market power whilst achieving high-level performances (Allen, W., 2006).

Hence, handling the issue of financial stability is not an element of novelty for economics, yet lately it got a distinct attention from experts. This is due to intense shifts that had taken place in the last decades under the strong movement action of technological innovation, liberalisation and globalization of national economy. In turn, commensuration of financial stability is difficult because of its multidimensional nature, making it almost impossible for its focus into a single indicator. Thus, taking into account the multitude of indicators for measuring the financial stability, different ranges of safety thereof, as well as the difficulties encountered in this connection in the assessment of the degree of liquidity and solvency of the entity, the majority of specialists recommend that in assessing financial stability there should be used the Scoring Models. Credit scoring method was first proposed by the American Economist D. Durand in the early 1940s.

A source of information for the analysis of the financial stability can be the data of the Balance sheet or the data of the Trail Balance. Because the balance sheet is the most available and prevalent source of information, this analysis, is sometimes the only way of assessing the economic and financial activity of the entity, allowing to carry out a qualitative and quantitative estimation of the financial stability for a specified period of time. The information obtained from the analysis performed is relevant for both internal and external users.

Methodology and research sample

The research underlying this study is application, in the sense that it was achieved with the aim to describe the method of credit scoring model, based on calculation of relative indicators used in financial stability analysis.

The universal method of dialectics and its processes were applied in the research case: deduction and induction, analysis and synthesis, scientific abstraction, analogy, correlation, as well as economic and mathematical methods, economic and statistical and those of data-processing economic analysis: comparison, classification, etc.

The essence of this method consists in grouping entities, depending on the level of financial stability, based on the actual amount of indicators and rating of each indicator expressed in score points assigned following the assessment of the experts. The analysis of financial stability may be performed by calculating following relative indicators: Return on assets (ROA), Current liquidity rate, and the global autonomy rate.

Table 1. Grouping of the entities by their categories regarding the financial stability depending on the level of solvency

Indicators	Limits of the categories according to criteria				
	Category I	Category II	Category III	Category IV	Category V
Return on assets	over 30 (50 score points)	29,9 - 20 (49.9-35 score points)	19.9 - 10 (34.9-20 score points)	9,9 - 1 (19.9-5 score points)	under 1 (0 score points)
Current liquidity rate	over 200 (30 score points)	199 - 170 (29.9-20 score points)	169 - 140 (19.9-10 score points)	139 - 110 (9.9-1 score points)	under 100 (0 score points)
The global autonomy rate	over 70 (20 score points)	69 - 45 (19.9-10 score points)	44 - 30 (9.9-5 score points)	29 - 20 (5-1 score points)	under 20 (0 score points)
Limits of the categories	over 100 score points	99-65 score points	64-35 score points	34-6 score points	0 score points

Source: adapted according to Savitskaya G.V., 2016

Category I – entities in this category have a high level of financial stability and have excellent credit, and there is no any irregularities upon payment of debts. Consequent risk exposure for lenders to this category of entities is at minimum level.

Category II – entities in this category may record small irregularities upon payment of debts. Consequent risk exposure for lenders to this category of entities is considered low.

Category III – problematic entities.

Category IV – entities with a high level of risk of bankruptcy even after the use of financial recovery methods. Consequent risk of exposure for this category is great.

Category V – entities with a maximum level of risk, insolvent entities (Muntean, 2016, p.55).

Next, we will determine in which class each of the 4 entities fall during this period (4 years). The following information is available:

Table 2. The level of financial stability assessment using Credit scoring method

Indicators	Year 2013		Year 2014		Year 2015		Year 2016	
	The number of score points							
EFES VITANTA MOLDOVA BREWERY								
Return on assets	11,60		13,18		14,536		21,112	
Current liquidity rate	20,116		30		30		30	
The autonomy rate	20		20		20		20	
Total number of score points	C III	51,716	C III	63,180	C II	64,536	C II	71,112
Heineken Romania								
Return on assets	30,907		28,131		25,36		20,557	
Current liquidity rate	30		30		30		30	
The autonomy rate	20		20		20		19,507	
Total number of score points	C II	80,907	C II	78,131	C II	75,360	C II	70,064
Bermas, Suceava								
Return on assets	9,877		8,410		12,281		12,352	
Current liquidity rate	25,511		30		30		30	
The autonomy rate	19,303		20		20		20	
Total number of score points	C III	54,691	C III	58,41	C III	62,281	C III	62,352
Martens, Galati								
Return on assets	0		0		0		0	
Current liquidity rate	6,136		5,932		10,156		0	
The autonomy rate	7,038		7,095		7,368		5,878	
Total number of score points	C IV	13,174	C IV	13,027	C IV	17,524	C IV	5,878

Source: Elaborated by authors.

Results and discussions

Performing the financial stability analysis of the 4 enterprises from the Republic of Moldova and Romania, from the beer sector, by using method of credit scoring, during 2013 – 2016, we have come to the following results that can be seen in the figure 1, 2, and 3.

Thus, according to the calculations, the level of autonomy rates for the 4 entities in the sample is shown in the figure 1.

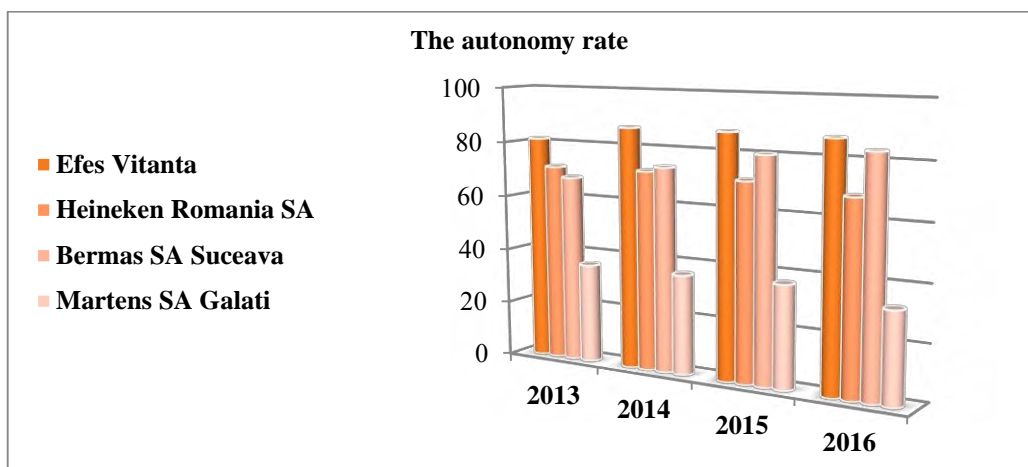


Fig. 1. Evolution of autonomy rates

Source: Elaborated by authors

The autonomy rate characterizes the level of financial independence of the enterprise. The high value of this indicator serves as a means of protection in the periods of decline and as insurance for obtaining the credit. The conditional character of this limit is obvious: for example, the enterprises with a higher profitability or an accelerated rotation speed of the current assets can afford a relatively high level of borrowed capital. However, the new tendencies in economy shows that the safety level of this ratio is (33%-100%). According to the data of the figure 1, we can remark that Efes Vitanta, the Moldovan Company, recorded the highest level of autonomy during the entire period. Heineken Romania and Bermas Suceava had almost the same levels of autonomy during these 4 years. Only Martens, Galati, recorded a small level of this rate, demonstrating a low level of financial autonomy.

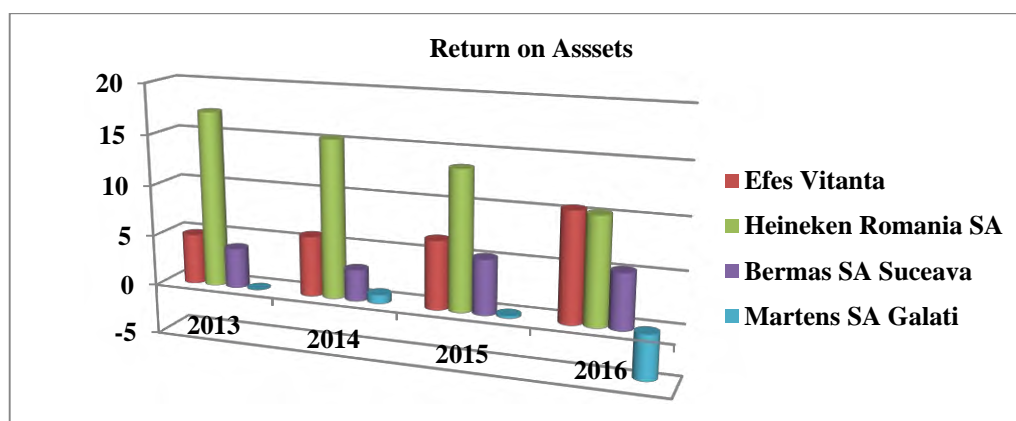


Fig. 2. Evolution of return on assets

Source: Elaborated by authors

Return on Assets is the most widely recognized instrument to measure entity's performance. This indicator characterizes the relationship between entity's financial result and total assets involved in generating of it (Tiriulnicova, 2017). According to the data from the figure above, we can note that the highest level of ROA during 2013-2015 was recorded by Heineken Romania. However, it decreased in dynamics and accrued in 2016 year a value less than the ROA of Efes Vitanta. Martens Galati recorded the smallest value of ROA in this period. In 2016, the value of Martens, Galati return of assets was negative, demonstrating the incapacity of the assets company to generate profit.

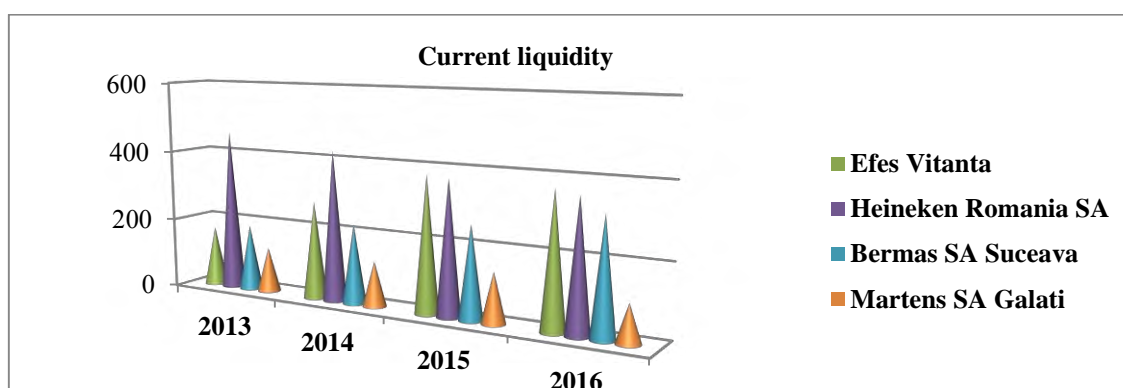


Fig. 3. Evolution of current liquidity rates

Source: Elaborated by authors

By liquidity, we understand the capacity of the enterprise to honour its current liabilities. Liquidity is the most important criterion in determining the payment capacity of the enterprise, consequently, the main criterion in evaluating the bankruptcy risk.

The current liquidity shows to which extent the current debts of the enterprise are insured with current assets. If the value of the indicator is sub-unitary, this means that the value of the current liabilities exceeds the value of the current assets, which implies the possibility of a high level of risk to appear in the entrepreneurial activity, as the insufficiency of liquidities may lead to bankruptcy of the enterprise. At the same time, a low level of liquidity is characterized by the risk resulted from the insufficient distribution of the production or of a poor organization of the technical-material, etc.

The normative value (critical) of the coefficient mentioned in different publications is different, but always supra unitary. In the practice of the developed countries, the normative value of this coefficient for different branches varies between 2.0 and 2.5 points. The current economic situation does not allow settling a unique normative for all the local enterprises, as in this case their insolvency would be determined formally.

If in 2013 and 2014 there was a clear difference among the liquidity ratios of these 4 companies, in 2015 and 2016 Efes Vitanta, Heineken Roamnia and Bermas Suceava recorded almost the same values of current liquidity ratio, which were placed between 2.0 and 2.5 points.

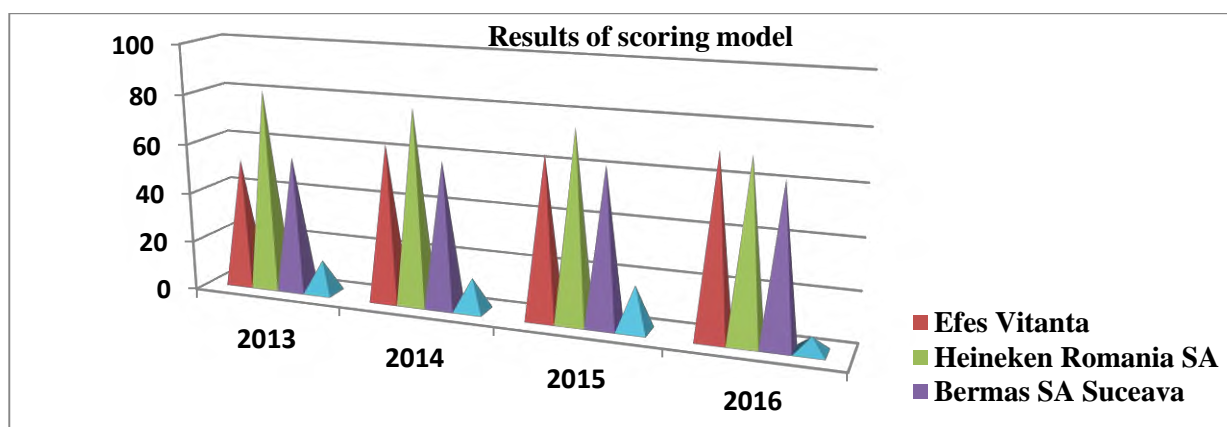


Fig. 4. Results of scoring method

Source: Elaborated by authors

From the figure above, we can remark that the company Heineken Romania is the most stable one, not risky, accumulating an average score from 80 to 70 points. This is largely due to the high level of liquidity and of return of assets rates. In this context, we can say that these rates reflect a high degree of financial stability, a continuous consolidation of that entity (Achim, 2014). However,

analysing the evolution, the tendency of the score, we can note that it decreases; year-by-year the company accumulates less points. This fact shows that the Heiniken Romania may have financial stability problems, specially related to ROA, in next few years.

The company Efes Vitanta was more risky in comparison with Heiniken Romania, during the 2013 – 2014 period, according to the obtained results. However, it became the most stable one in the last 2 years; the principal cause was the huge increase of the level of assets profitability and of the liquidity ratio level. At the same time, can be remarked a stable evolution of the global autonomy rate, during all 4 years.

We can observe that the last two companies are placed in the third and fourth categories during the analysed period. It means that these two Romanian companies from the beer industry are problematic entities, are entities with a high level of risk of bankruptcy even after the use of financial recovery methods. The worst situation was remarked for the company Martens, Galati in 2016.

Thus, this method clearly show that the analysed 2 entities meet a high level of financial stability problems and their activity depends on the government regulations. In this connection, the assessed firms must determine the causes of the reduction of the indicators and take action on its growth.

Conclusions

In the present article, were presented the Scoring Models. This analysis can be considered as very efficient and relevant because it enables the possibility of tracing causes of adverse changes in financial stability of the entity, as well as reaching a rational account between equity and borrowed capital, and their efficient use.

The information obtained, following the analysis provided, is relevant both for internal and external users. In this connection, we can say that our research has important implications, first for corporate governance, for internal users interested to find out in what area of financial stability is situated the entity in order to see if the financial balance is ensured, and in order to identify improvement mechanisms for the activity. Secondly, our results are useful for investors that wish to obtain the best profitability rate for their investments. They shall consider the level of financial stability of the entity as a very good predictor for the best profitability rate of their investments, aiming at investing capital or withdrawal of capital previously invested. In addition, our results have implications for decision-makers of financial lenders for granting, limiting or cutting off lending (Muntean, 2016, p.57).

So, after using this information all listed users have the equal possibility to conclude regarding the entity level of risk and its potential for development.

Thus, as limits to this study, we can conjure up the fact that our conclusions could be interpreted because of using only 3 indicators. For a better fundament of obtained results, it is necessary to add and analyse other models of analysis for financial stability in future research, and expand the number of entities analysed and the period of study.

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