ASPECTS CONCERNING THE RISK EVALUATION - CASE STUDY IN A ROMANIAN COMPANY

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Abstract—The economy must be taken into consideration numerous factors that intertwined and exercise a strong influence on social life. Among them a special place, it is extremely important risk. Forecasting firm revenues can be done by taking into account the risk that it behaves any economic activity. Assuming certain risks requires a certain economic and financial return that to compensate. The existence of a market economy makes any economic activity to be at risk, but in different proportions, due to the fact that between the risk and cost of capital there is a directly proportional, meaning that a large debt (pay equity) and requires appropriate risk. The purpose of this paper is to presents the genesis of the multidimensional concept of risk, an analysis of the risk evaluation models and an emprical study in a company.

Keywords—risk, probability, evaluation, models

I. INTRODUCTION

THERE have greatly increased concerne required probabilities systematic examination performance gain social - economical on the assumption that natural resources are finite, in some cases even register depletion trend and population and therefore needs, aspirations and diversify increase.

This paradox of contemporary society, emphasizing conjugate imbalance ecological implications of the existence of higher order and international relations between states and generated a pronounced confusion, two lines of action concretizatain well defined and interlinked.

This systemic thinking in proeconomic foundation of sustainable development and to do or involves substantial use of raw materials mainly for the benefit of present generations but also future ecological restoration and presentation, fairness and morality in the processes of integration and globalization.

Therefore, risk assessment is not an objective of singular different, but a powerful tool for identifying the need for adaptation of prevention measures at the company's objectives.

It is just a matter of checking the lists of recognized hazards, but should consider me less visible dangers interactions existing factors within or outside the organization. It carries a wide range of activities in order to raise awareness and awareness of all parties involved in the issue of promoting integrated management approach that takes into account the different stages of risk evaluation.

II. OVERVIEW OF THE RISK

A. Brief Definition of the Risk

Defining the notion of risk is a continuing concern of people from academia, given the diversity of risk acceptance. Despite its frequent use in everyday language, the term risk is not a commonly accepted definition of literature. The risk is approached differently in reference works from home and abroad. Thus were established along the three approaches to risk.

A first approach is aimed at defining risk as having negative value, associating it with danger, loss or grief. In this regard, Matthew Lenz defined risk as a random event that can generate damage [1].

In Explanatory Dictionary of the Romanian Language the risk is defined as the probability of reaching a danger, to have to face trouble or harm suffered or likely danger [2]. Cassidy et al. define risk as any issue that affects an organization's ability to meet its targets based [3].

In Webster's New Dictionary of the American Language risk is the possibility of loss or damage, loss or distress.

The authors Stefan Camelia and Sorin Enache define risk as a danger, inconvenience possible that man is conscious and strives to create the means to prevent, mitigate or eliminate the effects of, whenever possible [4].

Ion Stancu emphasizes that risk translates into profit variability than the average return over the past year; Stars do not risk anything but the inability of the organization to adapt in time and at the lowest cost to the variation of environmental conditions [5].

In general, risk is defined as the possibility that future income to be different from those expected to obtain. In other words the risk is income under the influence of

environmental variability involving the event of an adverse event.

The second approach to risk in carrying the concept gets a neutral connotation, being defined as the probability that can affect one or more of the objectives of the organization and may affect the likelihood of positive / negative partial or total company activity [6].

Maria Mihalciuc and collaborators believe that the term risk in economic activity means a wide range of uncertainty about the future work of the organization [7].

In Browning 's view, risk is an undesirable situation or circumstance involving probability to occur and potential negative consequences of risk is an inherent system that intervenes in the undertaking's activities at all levels and which is based on a number of factors [8].

Some french authors consider that the risk is the probability of success or failure, success means getting a profit and failure means losing money in an investment [9].

These statements provide a positive or negative image of the concept.

The third approach specialists see risk as a mix between opportunity and threat. Risk is a probability, a mathematical quantity that can be measured, calculated and estimated [10].

Risk is not a bad concept, risks are essential to progress and system failures are the key elements of learning. The need to balance the negative consequences associated with potential benefits this opportunity [11].

After analyzing in detail the definitions above it can be seen that each approach adds the concept, leading to its broad vision that involves not only a negative but also a positive concept that develops opportunities for the organization (Fig. 1).
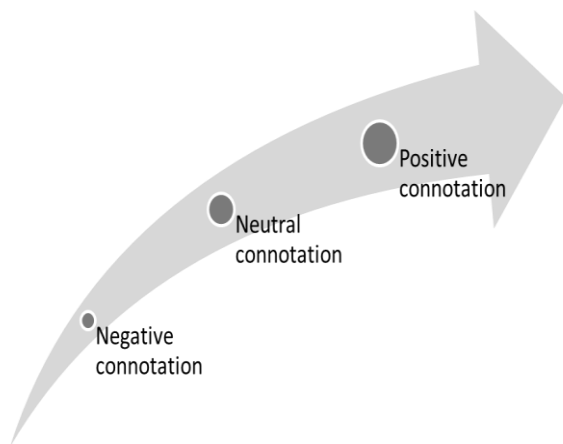

Fig. 1. Risk approaches.

In conclusion, it can say that risk is the probability that a future action to generate losses that will adversely affect assets, interests, activity and outcome of organizations.

B. Causes of risk

In a changing economy the risk of bankruptcy occurs

more often if the managers do not manage well their resources are increasingly limited. Therefore, causes that can lead to bankruptcy are numerous and concern:
1) *Reduction of activity, margins and rates of return;*
2) *Future legislative restrictions that may occur;*
3) *Action competition (much lower pricing for grabbing market enjoying a diversified, technology advances that improve competitiveness and goods);*
4) *Emergence and amplification problems treasury management;*
5) *Loss of a customer / supplier important or its bankruptcy; and*
6) *Bankruptcy of that company had financial relationships prevailed;*
7) *Lack of information or distortion of their*
8) *Circumstances of of major force (calamities, accidents, embezzlements, etc.);*
9) *High cost of the product;*
10) *Reduced competitiveness*

Study bankruptcy causes concluded that this phenomenon is not brutal, but a result of a gradual deterioration in the financial situation of the company, the risk of insolvency is foreseeable few years before termination payments [12].

III. THE BANKRUPTCY RISK EVALUATION MODELS

Bankruptcy risk stayed the attention of researchers in economics and beyond. This risk is related to the state of solvency of the organization, ie its likelihood or not to meet its maturing obligations.

Complexities that are involved in bankruptcy risk concept explain the variety of diagnostics and analysis.

Researchers sought to prevent the bankruptcy of firms using statistical models for assessing risk. The aim of these models is to determine for each firm a score called synthetic indicator to estimate the firm's bankruptcy [13].

Analysis using score can be used when seeking removal of restrictions imposed by traditional analysis by installments. With the score assessing the stability of the organization and more importantly they provide probable failures of the company.

All forecasts and predictions based on data published in the annual financial statements.

Bankruptcy prediction using a statistical technique by converting the information provided by economic and financial indicators a score able to predict the success or failure of a business [13].

The most used models for bankruptcy risk assessment are the following:
1) *Altman Model;*
2) *Conan & Holder Model*

A. Altman Model

The Altman Model is based on the statistical study of 33 companies with financial problems selected by type of activity and the 33 companies selected smoothly on the principle of similarity (a company with problems

corresponds to one without problems, the same size and the same branch) for a period of 20 years. 22 were considered financial reports, of which five were selected.

Score function is proposed [14]:

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1,05X_5 \qquad (1)$$

Financial reports selected are presented in table I:

TABLE I
FINANCIAL REPORT

Symbol	Description	Formula [15]
X_1	The rate of asset structure that measures the degree of flexibility of the entity.	$X_1 \rightarrow \dfrac{current\ assets}{total\ assets}$
X_2	Reflect the contribution of the entity to finance investments	$X_2 \rightarrow \dfrac{reinvested\ profit}{total\ assets}$
X_3	Measures the performance of the assets	$X_3 \rightarrow \dfrac{gross\ profit}{total\ assets}$
X_4	Measuring indebtedness of the firm	$X_4 \rightarrow \dfrac{market\ value\ of\ capital}{long\text{-}term\ debs}$
X_5	Measuring return on assets	$X_5 \rightarrow \dfrac{turnover}{total\ assets}$

From the information content of indicators follows that their values are the better to register as an absolute higher. The Z score is interpreted as in table II.

TABLE II
SCORE RANGES FRAMING

Score	Company situation
$Z \prec 1.8$	Imminent bankruptcy
$1,8 \leq Z \leq 2.67$	Uncertainty at high risk of bankruptcy
$2.67 \leq Z \leq 2.99$	Uncertainty with low risk of bankruptcy
$Z \succ 1.8$	Favorable situation

This model has the following disadvantages:
1) *Using historical information;*
2) *Different accounting assets movement;*
3) *Creative accounting;*
4) *Accounting estimates exceeded.*

Altman model includes indicators that characterize financial balance at short and long term, the management and profitability of the domestic economy whose share is close to that of the other four indicators together.

B. Conan & Holder Model

The model was developed by French analysts J. Conan and M. Holder in 1978. Research was based on a sample of 95 industrial profile firmecu that went bankrupt. Conan and Holder model is also based on Z score with the following structure [19]:

$$Z = 0.16X_1 + 0.22X_2 - 0.87X_3 - 0.1X_4 + 0.24X_5 \qquad (2)$$

Financial reports selected are summarized in table II:

TABLE III
FINANCIAL REPORT (INDUSTRIAL COMPANIES)

Symbol	Description	Formula [18]
X_1	Reflect the company's immediate liquidity operational benefit	$X_1 \rightarrow \dfrac{current\ assets - stocks}{current\ debts}$
X_2	Measure the company's financial stability	$X_2 \rightarrow \dfrac{permanent\ capital}{total\ assets}$
X_3	Reflect the level of funding from external sources	$X_3 \rightarrow \dfrac{financial\ expenditures}{turnover}$
X_4	The degree of staff remuneration	$X_4 \rightarrow \dfrac{personnel\ expenditures}{value\ added}$
X_5	Reflect the share in total value added	$X_5 \rightarrow \dfrac{operating\ result}{value\ added}$

The model highlights the patrimonial risk and default risk. The higher the value of Z is smaller the more the organization is most vulnerable. Framing areas of the score is presented in the following way (table IV).

TABLE IV
FRAMING INTERVAL

Score	Company situation	Risk of bankruptcy (%)
$Z \succ 0.16$	Very good	Less than 10%
$0.1 \prec Z \prec 0.16$	Favorable	10% - 30%
$0.04 \prec Z \prec 0.1$	Uncertainty	30% - 65%
$-0.05 \prec Z \prec 0.04$	High risk of bankruptcy	65% - 90%
$Z \prec -0.05$	Bankrupt situation	Over 90%

Disadvantages of the Conan & Holder model are the following:
1) *Are use only the financial status indicators;*
2) *Indicators only use part of the remuneration of capital;*
3) *Financial stability can be achieved through a highly leveraged company;*
4) *Intermediate liquidity can be achieved by increasing trade credit given to customers.*

IV. CASE STUDY

Company X operates in the manufacture and sale of military and civilian clothing. As a result of this activity, 95% of production is for export clothing made in EU countries such as Germany, Italy, Belgium, France, Spain and England.

The customer satisfaction at a particular quality is one of the major objectives that the company has joined the strategy. The experience gained on the basis of activities performed for 15 years at western clients high standards

of the European market, is a card enviable for any competitive producer. The organization wants to develop uniform department Romanian institutions. But to make this investment manager wants to know the economic effects (risk of bankruptcy) provided on the company in a market that is recovering from the economic crisis. In this regard will use model Coman & Holder to assess the risk of bankruptcy by consulting the elements that are in annual financial and economic situation of the company (tabel V).

TABLE V
INDICATORS OF FINANCIAL STATEMENTS

Indicator	2012	2013
Current assets	392290	706083
Stocks	57576	31284
Current debs	2943791	1688693
Permanent capital	4146670	4428233
Total assets	7090461	6116926
Financial expeditures	161626	179908
Turover	5727224	5237411
Personnel expeditures	3323869	3092656
Value added	4241466	4506452
Operating result	- 201977	31865

Using the above data is calculated probability of bankruptcy risk for the organization within 2 years (table VI).

TABLE VI
PROBABILITY OF BANKRUPTCY RISK

Indicators	2012	2013[a]
X_1	0.13	0.56
X_2	0.58	0.71
X_3	0.05	0.02
X_4	0.78	0.66
X_5	0	0.09

The results of the function Z belonging model Conan & Holder are:

$$Z_{12} = 0.16 \cdot 0.13 + 0.22 \cdot 0.58 - 0.87 \cdot 0.05 - 0.1 \cdot 0.78 + 0.24 \cdot 0$$
$$Z_{13} = 0.16 \cdot 0.56 + 0.22 \cdot 0.71 - 0.87 \cdot 0.02 - 0.1 \cdot 0.66 + 0.24 \cdot 0.09 \tag{3}$$

Score function value of the X Company is 0.26 in 2012, in this case the company ranks in the alert with a probability of occurrence of bankruptcy risk of 30% - 65%. In 2013 score value is 0.18 and the company stands a good financial situation in which the likelihood of bankruptcy risk is below 10%. In apparent that the organization's financial situation has improved from one year to another - the fruit collected by manager for the work done.

V. CONCLUSION

The importance of bankruptcy prediction and understanding the causes of economic failure is ultimately a pragmatic matter. Existing theoretical literature concluded that when the organization is facing increasing competition appears imminent the risk of bankruptcy. From the literature review show about positive / negative between management decisions and the appearance / eliminate the risk of bankruptcy. Existing techniques for assessing the risk of bankruptcy is proving to be extremely useful when the research is done on a set of objects characterized by a large number of variables, which makes the study of causal dependencies and classification of objects to be difficult. In conclusion it can say that the risk of bankruptcy can be reduced or even eliminated if managers take account of the changes taking place in the market.

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