Overview of Bankruptcy Establishing Procedures

Ioan Done*, Andreea Gagea**

* Petroleum-Gas University of Ploieşti, Bd. Bucureşti 39, Ploieşti
  e-mail: ioan_done@yahoo.com

** IVECO Ltd., IVECO House, Road 1, Winsford Industrial Estate, Winsford, Cheshire, CW7 3QP, United Kingdom
  email: andrei_gagea@yahoo.it

Abstract

The bankruptcy state is frequently evaluated using a set of indicators comprised by econometry models for analysis and measuring. Our claim is that the content, background and implications of using certain econometric patterns are restricted to financial bankruptcy.

Those indicators present a strong financial character such as: total debts, financial expenditure, solvency, liquidity, etc. The used indicators mainly mirror economic processes in the procurement and sale field to the prejudice of production.

In our opinion it is thus recommended for the indicators that express financial bankruptcy to be correlated to the indicators of work efficiency and of natural resources capitalization – as they contribute to the organization's sustainability and viability.

Key words*: financial bankruptcy, solvency, liquidity, bankruptcy risk probability*

Economic efficiency is by its nature, its forms and content, the synthetic expression of human reason within the social activity and the quality of economic operators' activity. It is not by chance that, in the last period, we face the rapid growth both of the extent field and of the number of the indicators that describe economic efficiency.

There are also significant concerns to establish new sets of indicators specific to different domains or objectives comprised in such complex types of programs as the Maastricht convergence criteria, Lisbon Strategy etc., representing the vast dimensions of competitivity, the sustainable human development and last but not least, confidence in the evolution of economic phenomena.

Related to the last mentioned aspect, it has been two decades since at the UE level the *Economic Feelings Index* started to be calculated (EFI) which „*is considered one of the most important indicator concerning the economic background and the member states development, taken into account by businessmen, authorities and consumers [...] Briefly, the aim of EFI is to allow the interested parties to have a clue about the economic future of Europe according to the confidence expressed within the economy development by five types of consumers (by*

consumers on the one hand and on the other hand, by the businessmen from the field of Industry, Trade, Services and Engineering).[1]

Economic theory and practice have acknowledged several methods, procedures, systems and last but not least patterns by means of which the activity of companies passing through different harsh stages may be analyzed. In this context, we must mention famous patterns such as: Altman, Connan-Holder, French Commercial Credit and recently in Romania Cămăşoiu – Negoescu.

Without aiming at providing further details about the econometric content, background or moment and implications of using these patterns, we consider that they are restricted to financial bankruptcy. This conclusion is suggested by the nature, content and relations between the used indicators.

Strictly referring to Altman and Conan-Holder patterns, we have noticed that certain financial indicators are dominant such as: total debts, financial expenditure, solvency, liquidity etc. The used indicators mainly reflect economic processes in the procurement and sale field to the prejudice of production.

Against this background, we consider that economic bankruptcy procedure cannot be set only according to the financial dimension, even though the latter mirrors a difficult economic state.

From the analyses made within the companies which should have been cleared, by the strict application of bankruptcy probability and risk coefficients according to various patterns, we managed to learn interesting things which are to be presented in the current paper.

Table 1 and 2 present the level and the development of the specific indicators derived from mathematical methods, which are decisive for a representative organization in the field of building oil equipment.

Table 1 Level and evolution of indicators used in establishing the „Z" score, following the Altman pattern

INDICATOR	Variables	2004	2005	2006
Working capital / Total assets	X_1	0,868	0,882	0,896
Profit reinvested / Total assets	X_2	0,008	0,010	0,010
Profit before taxes application / Total assets	X_3	-0,036	0,076	0,085
Shareholders' equity / Long, medium term loans	X_4	0	0,863	0,694
Net turnover / Total assets	X_5	1,197	1,023	0,991
The „Z"score following the Atlman pattern		**2,037**	**2,854**	**2,676**

Source: calculations on the basis of the internal documents of the company, following the formula:

$$Z = 1{,}2\,X_1 + 1{,}4\,X_2 + 3{,}3\,X_3 + 0{,}6\,X_4 + 1{,}0\,X_5^2 \tag{1}$$

[1] H r i t c u , M. - *Cu economia la psihiatru*, Capital, 27.03.2008, pag. 14

From the analysis of the „Z"score following the Altman pattern, it results that in 2004 the company reaches the bankruptcy area. Not by chance, in the first stage, the owners' (AVAS) decision was the company's liquidation.

The same conclusions and decisions are to be observed following the Conan-Holder pattern.

Table 2 Level and evolution of indicators used in establishing the „Z" score, following the Conan and Holder pattern

INDICATOR	Variables	2004	2005	2006
Gross operating income / Total debts	X_1	0,5	1,2	4,0
Long-term capital / Total assets	X_2	-1,5	12,9	12,2
Capital flow/ Total assets	X_3	6,4	6,9	5,7
Financial Expenditure / Turnover	X_4	-4,8	-1,5	-6,7
Expenses with the personnel / Added value	X_5	-8,6	-7,9	-6,7
The „Z" score following the Conan and Holder pattern		**-7,8**	**11,6**	**8,5**
INTERPRETATIONS		The company is not producing profit. Bankruptcy risk over 80%	Bankruptcy risk from 30%	Bankruptcy risk from 35%

Source: calculations on the basis of the internal documents of the company following the formula:

$$Z = 0,24\ X_1 + 0,22\ X_2 + 0,16\ X_3 - 0,87\ X_4 - 0,1\ X_5 \text{[3, 4]} \tag{2}$$

In the case of the above analysis, the involved decision factors decided in a second stage the maintenance, privatization and sustaining from the budget (subventions and different financial aids from the state).

The motivation for giving up the bankruptcy state had at its basis the employment maintenance, unemployment rate reduction and a relative stability of the population's incomes.

Technical factors were also very important, especially those related to the use of current production resources and the maintenance of the exchange relations for the goods and services characteristic for an industrial platform, the active flowing process, respectively. The historical aspects have also been important, as the company under study represents a significant benchmark in the tradition of Romanian industry.

---

[2] T o l e , M. - *Analiza economico-financiară a firmelor*, Editura Fundaţiei România de Mâine, Bucureşti, 2002, pag. 222-223

[3] M ă r g u l e s c u , D. (colectiv) - *Analiza economico-financiară*, Editura Fundaţiei România de Mâine, Bucureşti, 1999, pag. 285-287

[4] T o l e , M. - *Analiza economico-financiară a firmelor*, Editura Fundaţiei România de Mâine, Bucureşti, 2002, pag. 222-223

We must mention the fact that during the years preceding the Revolution, the company under study used to be an important branch of a head office representative for the national economy.

The clearance of some insolvent companies according to the calculations based on certain econometrical patterns should not be given up as a result of extra economic factors, such as the social, political or historical (traditional) ones. Without denying the importance of such categories of factors mentioned above, we claim that the decision upon the *economic bankruptcy* of a company should represent a solution, *only if the financial bankruptcy is related to a system of indicators that should reflect the economic reality, namely to measure the company's performance.*

As it is already known, studying *the object of political economy* requires also surpassing various obstacles related mainly to the personal interest involvement, the novelty of circumstances and, last but not least, the difficulty of creating models.

Concerning the last problem, the great Romanian scientist N. Georgescu Roegen claimed the following: "There are no labs where the social phenomena (including the economic ones) could be experimented...Eventually, a simple model can be a clear representation of the economic process provided the economist were skillful enough as to be able to select only a few representative elements out of the whole jumbled facts. Choosing the facts that matter is the main problem of any science."[5]

Specialized reference is made to the intense concern about the indicators to be established in order to assess the *performance* of the company. There is a favorable opinion about the fact that the performance of the company must be assessed by multidimensional systems that should involve the interests of all main participants, as it is impossible for all interests to be met.

The following statement concerns the difficulty of meeting all participants' requirements in economic life**: "***the clients want low prices, increased quality of products and services, long-term guarantee for their purchase. Employees want high salaries, better working conditions, benefits, bonuses, health insurance, etc. The financial providers want investments with low risk but high efficiency. The community, the civil society require, among other things, the increase of employment rates, the environment protection, charity, investments to the use of community, and so on.*"[6]

Within the field of economic factors there are a lot of elements included, the most significant being the following: "the national and foreign market; people's purchasing power; the financial potential of economy; the rhythm of economic development; the economic and financial links; the rate of inflation; the rate of unemployment; the changes in the exchange rate of the national currency as compared to that of the main foreign currency; the coefficient of risk per country; the rate of foreign investors in the general economy, and especially in the specialized branches of industry; the rate of interest at the bank loans; the condition of the specialized industry (expanding, declining, performant etc.); the structure of the specific market; the dimensions and the forms of the underground economy; the mechanism of establishing costs; the tax systems; the economic stability in general."[7]

Against this background, there would be necessary *the rethinking of the system of links and tools used to influence the behaviour of the economic agents, so that they should better adapt to the real conditions of the plants and in order to support the attainment of reform objectives, to ensure the coherence of the monetary and fiscal policy with the other components and objectives of the economic policy in general.*

---

[5] G e o r g e s c u - R o e g e n , N. - *Legea entropiei şi procesul economic*, Editura Politică, Bucureşti, 1979, pag. 545
[6] C i o b a n u **,** A. M. **-** *Analiza performanţei întreprinderii*, Editura ASE, Bucureşti, 2006, pag. 12
[7] P o p a , I. - *Managementul organizaţiei,* Editura Universităţii Petrol-Gaze din Ploieşti, 2004, pag. 61

Without disregarding the place and role of the various indicators by which we aim to assess the performance of a company, we consider that, beside the indicators related to profitability, solvency, liquidity, financial independence, ability of self-financing, we must also take into account work efficiency and last but not least, the indicators related to the degree of capitalization of the natural resources.

The necessity to include the above mentioned indicators (work efficiency and the degree of capitalization) among those needed to assess the both performance and the bankruptcy of a company is concerned *firstly* with the fact that these indicators make reference to the two original, main factors of production, namely *work* and *nature*.

Secondly, the respective group of indicators involves, through their establishment and achievement, the essential stage of the capital flow, namely the *production stage*.

Thirdly, the indicators related to work efficiency and the degree of capitalization of the natural resources, while establishing their level and dynamics, involve fundamental economic indicators, namely, *the gross added value, the net added value,* and last but not least, the profit.

Fourthly, the indicators related to work efficiency and the degree of capitalization of the natural resources lie at the basis of any attempt to make the economic systems of a certain social zone converge.

The analysis made at the companies that did not turn bankrupt – although the "Z" coefficients established by the models would have required this decision – has led to the idea that *the use of the indicators regarding work efficiency, including their correlation with the level and dynamics of salaries would have justified the opportunity of keeping them functionally also at the economic level.* These facts are also highlighted in the diagram presented in Figure 1.
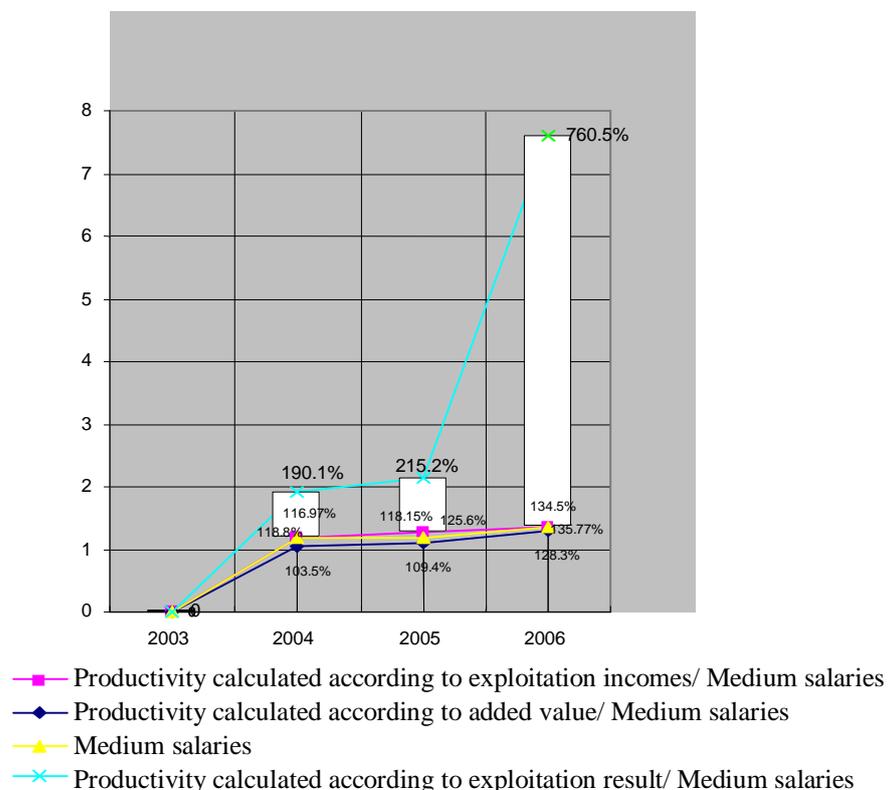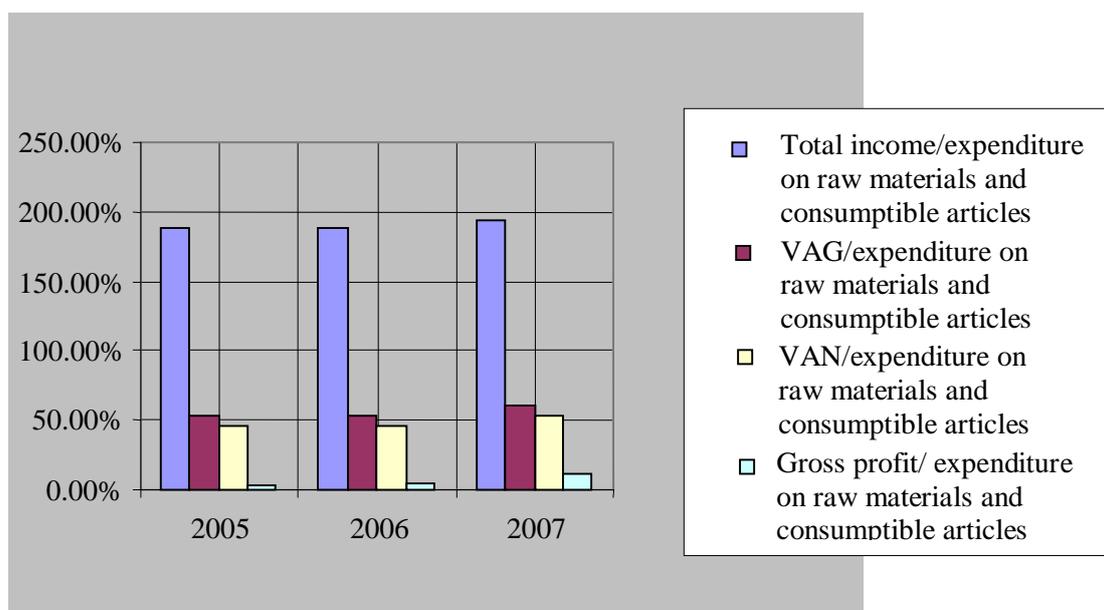

Fig. 1. Evolution of indicators concerning the correlation between work efficiency and salaries (stable data - 2003)

Source: Data analysis according to the financial documents of the company under study

The above diagram illustrates the fact that at the level of the company under study, even during those years when its clearance was required according to the models based on financial bankruptcy, the correlations of efficiency between the increase in work efficiency and the medium salaries were maintained.

The same results are obvious also in the case of the indicators that express the degree of capitalization of the raw materials and of the consumptible articles, presented in the next diagram (Figure 2).

Fig. 2. The level and evolution of the main indicators that mirror the capitalization of the raw materials and of the consumptible articles between 2005-2007

Source: Data analysis according to the financial documents of the company under study

The performance of a company must be assessed according to its contribution to the achievement of the fundamental correlation of any national economy, namely the one which must hold between *national wealth, work productivity calculated by the gross national/domestic product and the total consumption per inhabitant***.**

Integrating the national wealth among the correlations between production and consumption, between work productivity and salaries, respectively, represents a prerequisite both of the long lasting human development and of the integration into a superior economic field as far as competitivity and efficiency are concerned.

Naturally, the founder of economic science, Adam Smith, in his memorable work entitled – and not by chance – "*Nations' Wealth*" proved fundamental links to any national economy, the most significant ones for the current topic being the following: "

The natural price varies according to the *natural level* of each of its components, according to *salary, profit and annuity; and in each society this level varies according to the circumstances of that society, to its wealth or poverty*, to its state of progress, stagnation or decline... *Even though the wealth of a country were very high, yet in the case it is stagnating mostly, we cannot expect to find there high salaries...The great reward of work is thus not only the effect, but also the symptom of the increase in national wealth***.**"[8]

---

[8] S m i t h , A. - Avuția Națiunilor, vol.I, Chișinău, Universitas, 1992, pag. 46-51-53

In the context of the presented facts, the authors consider that the analyzed organization, due to the employees' efforts and the modern management put into practice after the privatization process, succeeded into surpassing critical moments in the 2003-2004 period – stage that, as it was underlined before, was associated to bankruptcy. The situation is synthetically depicted in Table 3.

Table 3 Dynamics of several fundamental indicators between 2003-2006 (2003 = 100)

%

Nr.crt.	INDICATOR	2003	2004	2005	2006
1.	Total assets	100	106,8	129,2	144,6
2.	Fixed assets	100	98,9	113,3	118,8
3.	Circulating assets	100	110,1	135,3	153,7
4.	Total debt	100	126,4	59,5	70,3
5.	Equity capital	100	-64,7	727,9	776,3
6.	Added value	100	112,3	117,1	152,2
7.	Expenses with the personnel	100	111,2	107,0	118,7
8.	Gross operating income	100	105,0	117,2	459,1
9.	Gross profit	100	-40,9	343,6	432,2

Source: authors' calculations according to the financial documents of the company under study

The company under study will succeed in maintaining the positive trend, mirrored by the efficiency indicators' level and dynamics as far as it will fructify its existence in the specific economic area and the huge potential in the designing and research field. This includes an education network compatible with its activity domain, beginning with the vocational education, continuing with high school and ending with a largely acknowledged university, both at national and international level.

The structural changes that come along with the increase in the performance of companies require the implementation of strategic management, which aims to "wrap" the harshness of the economic field, taking this risk on behalf of creativity and of the attempts to join the participant interests to the profit, the guarantee of free professional training and last but not least, the generalization of its participatory side.

References

1. C i o b a n u , A. M. - *Analiza performanţei întreprinderii*, Editura ASE, Bucureşti, 2006
2. G e o r g e s c u - R o e g e n , N. - *Legea entropiei şi procesul economic*, Editura Politică, Bucureşti, 1979
3. H r i t c u , M. - Cu economia la psihiatru, *Capital*, 27.03.2008
4. M a r i n , D. - *Limitări manageriale*, Editura Economică, Bucureşti, 2000
5. M ă r g u l e s c u , D. (colectiv) - *Analiza economico-financiară*, Editura Fundaţiei România de Mâine, Bucureşti, 1999
6. P o p a , I. - *Managementul organizaţiei,* Editura Universităţii Petrol-Gaze din Ploieşti, 2004
7. P o p e s c u , C., G a v r i l ă , I., C i u c u r , D. - *Teorie economică generală*, vol. I şi II, Editura ASE, Bucureşti, 2005
8. S m i t h , A. - *Avuţia Naţiunilor*, vol. I, Chişinău, Universitas, 1992
9. T o l e , M. - *Analiza economico-financiară a firmelor*, Editura Fundaţiei România de Mâine, Bucureşti, 2002
10. V e r b o n c u I , P o p a I . - *Diagnosticarea firmei, Teorie şi aplicaţii*, Editura Tehnică, Bucureşti, 2001
11. T o f f l e r , A., T o f f l e r , H. - *Avuţia în mişcare*, Editura Antet, Bucureşti, 2006

Unele considerații privind stabilirea stării de faliment

Rezumat

Starea de faliment este evaluată adeseori prin utilizarea unui set de indicatori ce se include în modele econometrice de analiză şi măsurare. Sfera de aplicabilitate, momentul şi implicaţiile utilizării acestor modele sunt circumscrise, în principal, falimentului financiar. Aceşti indicatori au un pronunţat caracter financiar: este vorba de datorii, cheltuieli financiare, solvabilitate, lichiditate, etc. Respectivii indicatori reflectă îndeosebi procese economice din sfera circulaţiei (aprovizionare, desfacere), în detrimentul producţiei. În opinia noastră este însă recomandabilă şi corelarea indicatorilor ce exprimă starea de faliment financiar cu indicatorii productivităţii muncii şi ai gradului de valorificare a resurselor naturale, ce pot contribui la sustenabilitatea şi viabilitatea firmei.