

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/357935830>

Diagnosis of business

Book · January 2017

CITATION

1

READS

374

1 author:



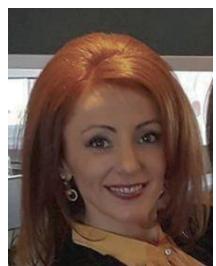
Achim Monica Violeta

Babeș-Bolyai University

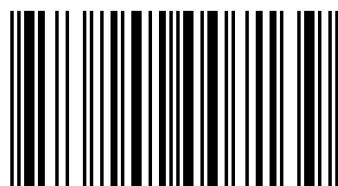
186 PUBLICATIONS 2,002 CITATIONS

[SEE PROFILE](#)

Diagnosis of a business is required by a lot of interested parties: management, investors, staff, suppliers and clients, competitors, banks, state etc. All their decisions regarding the company's activity will be adopted after a proper analysis of its activity. Sustainable development and implicitly globalization, impose new performance standards for the companies. In the context of sustainable development, new corporate governance standards, as well as new social and environmental standards are required. In the classical approach of performance only financial results matters. But, the moderns concepts of performances requires maximizing the interests for all the stakeholders under the concept of global performance of a business. The Triple bottom line approach (TBL) has evolved over time under the Quadruple Bottom Line approach, by maximizing the performances of the company on the four pillars such as economic, social, environment and corporate governance, to respond to the requirements of a sustainable development economy. The present book reflects my habilitation thesis in the area of assessing the business performance under the concept of global performances.



Monica Violeta ACHIM is currently professor dr. habil. at Babeş-Bolyai University, Faculty of Economics and Business Administration, Department of Finance, Cluj-Napoca, Romania. The main area of interests are: financial analysis, corporate finance and accounting. She currently teaches disciplines in the area of analysis and diagnosis of business.



978-620-2-00713-9

Achim



Diagnosis of business.

Monica Violeta Achim

Diagnosis of business

A global view

LAP LAMBERT
Academic Publishing

Monica Violeta Achim

Diagnosis of business

FOR AUTHOR USE ONLY

Monica Violeta Achim

Diagnosis of business

A global view

FOR AUTHOR USE ONLY

LAP LAMBERT Academic Publishing

Imprint

Any brand names and product names mentioned in this book are subject to trademark, brand or patent protection and are trademarks or registered trademarks of their respective holders. The use of brand names, product names, common names, trade names, product descriptions etc. even without a particular marking in this work is in no way to be construed to mean that such names may be regarded as unrestricted in respect of trademark and brand protection legislation and could thus be used by anyone.

Cover image: www.ingimage.com

Publisher:

LAP LAMBERT Academic Publishing

is a trademark of

International Book Market Service Ltd., member of OmniScriptum Publishing

Group

17 Meldrum Street, Beau Bassin 71504, Mauritius

Printed at: see last page

ISBN: 978-620-2-00713-9

Zugl. / Approved by: Bucharest, Academy of Economy Studies, Habil. 2015

Copyright © Monica Violeta Achim

Copyright © 2017 International Book Market Service Ltd., member of
OmniScriptum Publishing Group

All rights reserved. Beau-Bassin 2017

FOR AUTHOR USE ONLY

MONICA VIOLETA ACHIM

**DIAGNOSIS
of
BUSINESS**

FOR AUTHOR USE ONLY

2017

CONTENT

INTRODUCTION.....	4
CHAPTER 1. FUNDAMENTAL CONCEPTS OF BUSINESS DIAGNOSIS	6
1.1 Conceptual approaches	6
1.2. Diagnosis versus analysis. Comparisons between the concepts.....	7
1.3. Business diagnosis users	10
1.4. Methodology of assessing the business diagnosis	14
1.4.1. Deterministic models	14
1.4.1.1. The models of Romanian banks.....	18
1.4.1.2. The model of Romanian Chamber of Commerce and Industry.....	19
1.4.1.3. The Ernst & Young model	21
1.4.1.4. Coface's model	23
1.4.2. Statistical models.....	23
1.4.2.1. Danmarks National Bank's model.....	29
1.4.2.2. Dun& Bradstreet's model	30
1.4.2.3. Rating agencies' models	32
1.5. Components of business diagnosis.....	33
CHAPTER 2. DIAGNOSIS OF THE COMPANY'S EXTERNAL DIMENSION.....	37
2.1. General approaches	37
2.2. Steps in assessing a diagnostic of the company's external dimension.....	40
2.3. Assessing a fast diagnostic model of the company's external dimension	45
CHAPTER 3. FINANCIAL DIAGNOSIS: A MAIN COMPONENT OF BUSINESS DIAGNOSIS.....	53
3.1. Evolving concepts of financial performances	53
3.2. Diagnostic of liquidity and solvency	58
3.2.1 Diagnostic of liquidity.....	59
3.2.2. Diagnostic of solvency	65
3.3. Diagnostic of gearing	69
3.4. Diagnostic of management activity	73

3.5. Diagnostic of profitability	78
3.5.1. Diagnostic of profit margin ratios	79
3.5.2. Diagnostic of return ratios	81
3.5.2.1 Diagnostic of financial return	82
3.5.2.2 Diagnosis of economical return	84
3.6. Diagnostic of cash-flow	90
3.7. Diagnosis of risks	96
3.7.1. Diagnosis of operational risk	96
3.7.2 Diagnostic of financial risk	99
3.8. Diagnostic of stock market indicators	104
3.9. The synthesis of financial diagnosis	112
 CHAPTER 4. DIAGNOSIS OF ESG DIMENSIONS OF PERFORMANCES	115
4.1 Diagnostic of the environmental performances.....	117
4.1.1. Some approaches	117
4.1.2. Assessing a fast diagnostic model of the company's environmental perfomances.....	120
4.2. Diagnosing the social performances	125
4.2.1. Some approaches	125
4.2.2.Assessing a diagnostic model of the company's social perfomances	127
4.2.2.1.Assessing a diagnostic model of the labor practice performances	128
4.2.2.2.Assessing a diagnostic model of the human rights perfomances.....	129
4.2.2.3.Assessing a diagnostic model of the society performances.....	130
4.2.2.4. Assessing a diagnostic model of the product responsibility.....	131
4.2.2.5.Synthesis the diagnostic model of the company's social perfomances	133
4.3. Diagnosis of the corporate governance' s perfomances	135
4.3.1. Conceptual approaches	135
4.3.2. Assessing a diagnostic model of the corporate governance's perfomances ..	141
4.4. Aggregation the performance dimensions. Assesing a global FESG score...149	
BIBLIOGRAPHY.....	153
ANNEXES	161

INTRODUCTION

Diagnosis of a business is required by a lot of interested parties: management, investors, staff, suppliers and clients, competitors, banks, state etc. All their decisions regarding the company's activity will be adopted after a proper diagnostic analysis of its activity.

Sustainable development and, implicitly, globalization impose new performance standards for the companies. In the context of sustainable development, new corporate governance standards, as well as new social and environmental standards are required. They come to complete the overall performance of the company reflected by classical financial indicators.

A global diagnosis of a company's business targets an external and an internal major dimensions of performances. Referring to an internal dimension of diagnosis, it can be designed in relation with the evolution of economy and evolving of new concepts that require new rules for assessing the business performances. Thus, basing on *the classical approach of performance* concept, stated by Milton Friedman (1970) maximizing the financial results for shareholders is the highest social responsibility of a company. Under this approach, only the economical and financial results are the main important reason for survive in economy. But, *the moderns concepts of performances* are based on value creation for all the stakeholders (management, investors, staff, suppliers and clients, competitors, banks, state etc.). One of the ways to achieve excellence in business is represented by performance, and at present we speak more and more about *global performance*. The concept of *global performance* has also developed over time. From the first, this concept has been known under the *Triple bottom line approach* of Elkington (2002), meaning the maximizing the performances of the company on the three pillars: *economic, social and environment performance*. Later, global performance concept has evolved under the *Quadruple Bottom Line* approach, by maximizing, in addition, the performance of corporate governance. Assessing of ESG scores (Environmental, Social and Governance), as non-

financial scores of business companies, became an important step in determining the real performances of business today. Thus, the modern management of performance is dominated by the following concepts: *governance, performance, value and stakeholders*.

The present book contains the modern approaches to diagnose a business performance of a company which activates in a modern sustainable development economy. Also it proposes general models for diagnosing a business. This work is necessary both for the academic environment and the business environment, providing the guarantee of acquiring rich and up-to-date skills in the financial analysis area, in order to ensure the professionalisation of all economic specialists at a high level.

FOR AUTHOR USE ONLY

CHAPTER 1. FUNDAMENTAL CONCEPTS OF BUSINESS DIAGNOSIS

1.1 Conceptual approaches

The diagnosis process, in the general sense, represent „a broad investigation of the main aspects of the organization activity, of economic, technical, sociological, legal and managerial nature, in order to identify strengths and disruption, causes that generated them, and to design some recommendations for improvement and development ” (Miles, 2000, p.86).

In the view Bătrâncea et al. (2008) analysis and diagnosis of a business involves the decomposition of a mechanism or an economic phenomenon in its component parts, determining factors of influence, measuring the influence on the components, both static and in dynamic, and ultimately determining the strengths and weaknesses of the mechanism or economic phenomenon investigated, and proposing practical solutions for correction of the trajectory of less functional components.

In our view, the diagnosis can be defined as a *complex research of various aspects that characterize the business company, through which are identified the strengths and weaknesses, the causes that generated them and they are made recommendations to eliminate or diminish the negative aspects and / or exploit the positive ones.*

Diagnosis of business is a handy tool for manager very useful in formulating qualitative and/or quantitative judgments about status, dynamics and prospects of the business activity.

Diagnosis can be of a "curative" when it applies to companies in financial difficulty (a so called "crisis" diagnosis), or "preventive" when it applies to healthy companies and the objective is to identify the ways to improve the performances (a so called diagnosis "control").

1.2. Diagnosis versus analysis. Comparisons between the concepts.

In everyday speech the confusion between the terms of diagnosis, analysis control often comes. "Diagnosis can not be confused with the analysis even if it the main steps in diagnosis are based on the step of analysis. " (Colasse,1994, p. 5)

To argue the differences between these concepts we point out theirs terminological concepts and find out the main differences.

A. The term "analysis" comes from French and according with Cambridge Advanced Learner's Dictionary & Thesaurus means:

- On one hand, the verb „to analyze” means *to study or examine something in detail, in order to discover more about it.*
- *On the other hand*, the noun „analysis” is *an act of analyzing of something.*

Analysis, as a general method of research, involves decomposition or of an object or phenomenon in its component parts, in the simplest elements. Using specific methods, each component is examined, the causal relations are determined and also the factors that generated them, conclusions are formulated and the future framework is outlined.

Niculescu (1998, p. 22) sees the economic and financial analysis as “a set of technical concepts and tools to ensure treatment of external and internal information in order to express relevant feedback on the situation of a company, on the level and quality of its performances, on the degree of risk in a highly competitive and dynamic environment”.

The financial analyst calculates, based on the financial statements, a series of key financial ratios in order to highlight the strengths and weaknesses of the company's financial activity and thus assess the overall performance and standing of the company (Brealey, 2006, p. 783).

The economic and financial analysis has a well-defined purpose, namely to formulate relevant conclusions about the past, present and future conditions of the activity, as well as about the efficiency of the company's management. In the course of the analysis process, financial statements, databases and other

information sources are used "(Helfert, 2006, p. 33). In conclusion we consider that *the general objective of economic and financial analysis* consists in studying the mechanism of formation and change of economic phenomena through the decomposition of them in component elements, factors and causes of the phenomenon studied through structural analysis, from the factors acting indirectly to those with direct action until the discovery of the final causes (primary causes). Analysis carries out from appearance to essence, from general to particular, from simple to complex to explain a certain state of fact, a certain level or a specific evolution of a phenomenon.

- *Elements* are part of the analyzed phenomenon (result).
- *Factors* are forces driving to the emergence of a phenomenon.
- *Causes* are circumstances, that in certain conditions, explain the emergence of a phenomenon (a result). The cause is a factor that can not be split, representing the final essence of the phenomenon.

The scheme of the development of economic and financial analysis process is presented in the figure below:

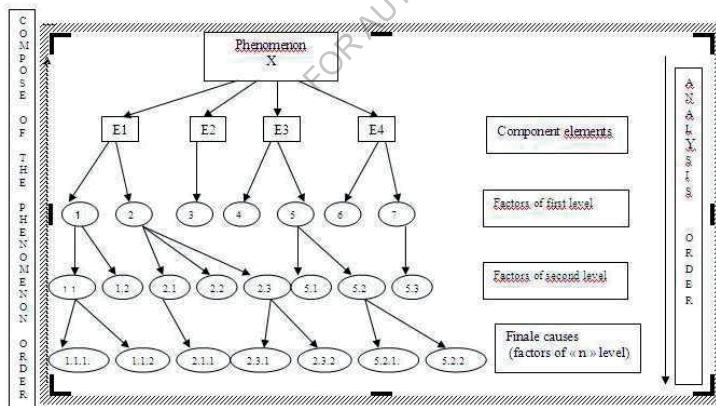


Figure. no. 1

The scheme of the development of economic and financial analysis process

As such, the phenomenon X may be addressed as a result of the combination of factors and causes summarized above.

Overall objectives of the analysis proces consists in identifying and measuring the influence of causes and intercondition factors that determined the evolution and level of economic phenomena.

B. The term "diagnosis" is of Greek origin and means *apt to discern*.

According with Cambridge Advanced Learner's Dictionary & Thesaurus the noun „diagnosis” means *a judgment about what a particular illness or problem is, made after examining it*.

Unlike the process of analysis the business activity, the process of analysis and diagnosis consists in the following activities:

- ➊ *The formulation of value judgments* on this phenomenon;
- ➋ *Identify symptoms, problems* by reference to certain references;
- ➌ *Prescribing "therapy"* to redress a situation at a time.

It may be noted that unlike the analysis of a phenomenon through its decomposition, the diagnosis involves the framing of analyzed aspects in stereotypes, by reporting them to some *references*, in other words making some *value judgments* on the analyzed phenomenon. The ultimate aim of diagnosis is to *prescribe "therapy"* for recovery and to track the way they are carried out.

In the formulation of a diagnosis is dashing necessary to pertain to some *references*. In supporting the spatial comparisons of different economic and financial indicators, information provided by governmental bodies, banks, consulting or rating companies etc. may be used.

Diagnosis process is based on the findings of analysis process coming to complete the general conclusion about how is the state of company. On this basis, there are widespread in the literature the term of "analysis-diagnostic" as used synonym for "diagnostic". This overlap of the two terms actually comes from finding the analysis process, as part in the diagnosis process (as a whole). However, we have to note that not entire part of analysis process is finding in the

diagnosis process. Some results of analysis are not used further for the diagnosis process (e.g., to simply find the causes of an economic phenomena).

Concluding, *the overall objectives of the diagnosis process* consists in identifying strengths, weaknesses, risks and opportunities in the activity of entities, and prescribing recovery therapy as well as tracking how it is being carried out. Using references and value judgments are also one of the main patterns of the diagnosis process.

1.3. Business diagnosis users

The categories of diagnosis's users are various and their business information needs vary according to the type of decisions that each category needs to take, as below.

1. Corporate governance has the following expectations:

- ⇒ *Establishment of investment and financing policy;*
- ⇒ *Increasing solvency and financial autonomy;*
- ⇒ *Debt repayment and debt recovery strategy;*
- ⇒ *Ensuring the short and long term financial balance.*
- ⇒ *Establishment the personnel policy: personnel strategies, qualification, reprofiling, dismissal, employment;*
- ⇒ *Establishment of trade policy: strategies for choosing optimal trading partners; the receivable recovery strategy; strict adherence to contractual terms with commercial partners; advertising; increase of goodwill;*
- ⇒ *Establish short and long term strategies;*
- ⇒ *Knowing and avoiding the risk of bankruptcy.*

The economic and financial analysis, and also the diagnosis, through theirs methods and procedures reflect an indispensable tool for managerial activity and for the entire corporate governance system of the entity, as they provides practical solutions for prevention, elimination of destructive factors and creates favorable conditions for the unlimited action of positive factors.

The corporate governance of the entity values analysis and diagnosis of business as one of the management and control tools or as a means of communication, at this level the analysis being also called as *managerial analysis*.

2. Investors need to decide about the following issues:

- ⇒ *Retention, prudence, or refusal to invest in capital;*
- ⇒ *The decision to invest capital within an environment favorable to business.*

In choosing an investment variant, the factor determining the investors' decision depends on the horizon of interest pursued in the company, as follows:

- ➡ If the investors are looking at the future development of the company or the *outlying horizon*, the potential investors (or majority of the shareholders, in the case of existing investors) will be interested in *the level of the results which will generate in the future increases in shares value*.
- ➡ If the target is the immediate gain, under *one year horizon*, a gain in the nature of distributed dividends and earnings from exchange differences, is pursued. Potential investors, or minority shareholders, in the case of existing investors, will be concerned on *the level of these type of gain*.

3. Shareholders have some targets such as:

- ⇒ *Maintain, increase or decrease the invested capital;*
- ⇒ *Withdrawal of invested capital;*
- ⇒ *Controlling the results and dividends that can be distributed.*

4. Employees are interested in:

- ⇒ *Stability of jobs;*
- ⇒ *The existence of a reasonable level of remuneration correlated to the profitability of the entity;*
- ⇒ *Existence of an adequate insurance and social protection system;*
- ⇒ *Providing incentives, including professional opportunities;*

4. Financial creditors (banks and others financial institutions) have the need to diagnose the clients' state in order to assess the following decisions:

- ⇒ Granting, restricting or terminating credit according to the customer's creditworthiness;
- ⇒ Applying sanctions in case of default on debt;
- ⇒ Requesting the commencement of the insolvency proceedings, in the event of exceeding the period of payment of the debts.

Diagnosis the state of the clients by the financial institutions have to express an opinion on the ability of these to repay credits and interests. Particular attention in this analysis is given to the liquidity and solvency analysis. Such type of analysis is called as *creditworthiness analysis*.

5. Suppliers are interested in:

- ⇒ The client's (buyer)'s creditworthiness, ie its solvency and the degree of liquidity, according to which they can design their client policy;
- ⇒ Requesting advance payments, letters of credit, etc .;
- ⇒ Continuity of customer activity;
- ⇒ Maintaining, increasing or suspending of deliveries;
- ⇒ Canceling the concluded contracts with their clients.

6. Clients are interested in:

- ⇒ The economic and financial performance of the supplying company, which reveal the supplier's ability to meet the customer's supply needs with the volume, quality and structure of the goods and services required;
- ⇒ The continuity of the supplier's business in order to guarantee the long-term supply of the goods and services; this interest is manifested especially when they have long-term cooperation with the entity or is dependent on it.

- ⇒ Negotiation on the conclusion of purchase contracts;
- ⇒ Maintaining, supplementing (increasing) or canceling contracts with the supplying company.

7. Governments and its institutions

- ⇒ *National Ministries of Finance* need: to develop strategies and tax policies; to run the tax control; to establish the penalties for unpaid tax debts; to establish the penalties for unpaid tax debts; to allocate or stop of financial resources in government investment policy; to asses the economic and financial indicators at the macroeconomic level.
- ⇒ *National Ministries of Justice* require some judicial diagnostics based on financial information in respect of disputes between participants in business environment or in case of bankruptcy.
- ⇒ *National Ministries of Coordinating the European funds absorption* are in direct relation with Brussels, for accelerating the absorption of European funds.
- ⇒ *National Chambers of Commerce and Industry and National Statistic Institutes* are interested in making a competitive hierarchy in order to establish market leadership or in order to knowing the position of a company by referring to competitors.

8. Community and non-governments institutions, represented by the following categories:

- ⇒ *Financial analysts, companies of consulting, rating companies or rating agencies* need to express theirs opinion about a business state of a company in order to predict the future of business and evaluating the risk of failure;
- ⇒ *Local policymakers* are interested in the evaluate the business performances to calculate their contribution to the local economy, to know about employment and training workforce, trends in prosperity company, domain of activity and so on;

- ⇒ *Environment agency* are interested in anti-pollution policies promoted by entities, compliance with environmental regulations allowed;
- ⇒ *Offices of protect the consumer* need to explain the increasing in prices, the comparison between quality and price of a goods and services sold and so on.

1.4. Methodology of assessing the business diagnosis

Methodology is a method of knowledge with maximum generality that consists of all research methods used by a science to achieve its objectives.

Diagnosis methodology of the company comprises a set of methods, techniques and processes by help which the objectives of diagnosis are achieved. These methods and techniques used can be of deterministic or statistical, thus will result the deterministic and statistical models for diagnosis the business company.

1.4.1. Deterministic models

The deterministic models use techniques such: ratios, comparisons, induction-deduction, analysis-synthesis, scoring, evaluation charts etc. When selecting the indicators representing a diagnosed field and when ascribing importance scores, a very important role is held by the experience and the professionalism of the financial analyst. These will help him to making objective and adequate qualitative and quantitative evaluations.

In order to asses a global diagnosis of a company the data sources consists in public information available on the company website as well as its own financial or non-financial data on its activity, data from financial statements of the companies for a period of analysis of at least 3 - 5 years.

Among the specific methods of the diagnosis process there is widely used in the literature the *SWOT analysis* - Strengths, Weaknesses, Opportunities, and Threats method (in order to ensure a quality approach). SWOT method can be used in combination with the *evaluation grids method* (in order to assess a quantitative approach), for getting both a qualitative and quantitative assessment.

Specifically, the preparation stages for the global diagnosis of business consist in the following:

- a) Selecting the criteria* for each specific area of diagnosis;
- b) Assessing criteria (indicators)* of the investigated area;
- c) Reference levels are established* for each selected indicators. For qualitative indicators (characterizing the legal area, the management and human resources quality, the equipment performance, the quality of products, the social and environmental performance) the reference levels are given by the catalogs of standard levels or, in their absence, the professional judgement of the analyst can be also used.

For the quantitative indicators (such as financial indicators) the reference values are reflected by the averages of the sector in which the company works. For some financial indicators research literature shows some optimum levels of achievement, generally available, which can be used by the analysts as reference levels (eg. for liquidity ratios, solvency ratios, financial dependence, economic and financial risk).

- d) Ascribing the grids for evaluating criteria*, as follows:

- ⊕ If only the status or the tendency of indicators accounts, the simple form of the chart will be used, as follow:

Table 1. Grid for evaluate the status OR the tendency

Note (N)	1	2	3	4	5
Status	Critical	Weak	Mean	Good	Strong
Tendency	Sudden impairment	Slow impairment	Maintaining	Slow improvement	Sudden improvement

- ⊕ If there are evaluated at the same time, both the status and the tendency of Indian indicator, there will be used a complex evaluation matrix, as follow:

Table 2. Grid for evaluate the status AND the tendency

Tendency/Status	Critical	Weak	Mean	Good	Strong
Sudden improvement	3	3.5	4	4.5	5
Slow improvement	2.5	3	3.5	4	4.5
Maintaining	2	2.5	3	3.5	4
Slow impairment	1.5	2	2.5	3	3.5
Sudden impairment	1	1.5	2	2.5	3

e) Assigning an appropriate score according with the state and/or tendency of the indicators (see step above);

f) Calculatong the rating score of each diagnosed areas, as an average score as follows:

$$\bar{N}_j = \left(\sum_{i=1}^n p_i x N_i \right) j \quad \text{where,}$$

- \bar{N}_j represents the resulted diagnosis score, calculated for an investigated areas “j”;
- p_i is the weight of importance given to each “i” selected criteria;
- N_i consists in the points corresponding to each “i”selected criterion according to the state and/or its tendency.

g) Interpreting the rating score of each diagnosis, by using the table below:

Table 3. Rating score of investigated areas of activity

State of indicators	Rating score- \bar{N}	SWOT Clasified
Forte	5	STRONG
Very good	4.5	
Good	4	GOOD
Satisfying	3.5	
Medium-accepted	3	UNCERTAIN
Unsatisfying	2.5	
Weak	2	WEAK
Very weak	1.5	
Critical	1	CRITICAL

h) Determining the global rating of business as follows:

$$R = \sum_{j=1}^m p_j x \bar{N}_j \quad \text{where ,}$$

- R represents the global rating (the global score) of a company;
- p_j is the weight of importance given to each investigated diagnosis;
- \bar{N}_j represents the resulted diagnosis score, calculated for an investigated areas “j”; it is determined above.

Depending on the values of R, the global rating of a company classifies the global diagnosis of the companies as follows:

- a) **Rating Class A**- Strong/strenght diagnosis, if $4.5 \leq R \leq 5$, reflecting very good performances and a very high level of trust in company's business by stakeholders;
- b) **Rating Class B** – Good Diagnosis, if $3.5 \leq R < 4.5$, reflecting good performances and a high level of trust by stakeholders;
- c) **Rating Class C**- Uncertain Diagnosis, if $2.5 \leq R < 3.5$. In this case, the business facing some problems, the opportunities for growth are uncertain, the possibilities of recovery are reduced;
- d) **Rating Class D** - Weak diagnosis, if $1.5 \leq R < 2.5$. In this case, the business faces major problems, the risks are high, the degree of confidence of the stakeholders is reduced;
- e) **Rating Class E**- Critical diagnosis, if $1 \leq R < 1.5$. In this case, the problems of the company are very serious, it is facing financial bottlenecks and there is a risk of imminent bankruptcy.

i) Drawing up interpretation, recommendations and future action strategies.

Our view model presented above has the advantage of evaluating the business activity both as qualitative (by using SWOT analysis) and quantitative (by using the evaluation grids method), on a Likert scale with 5 levels (minimum 1 and maximum 5).

Many banks, rating agencies or government institutions are using the deterministic models in order to encapsulate the final rating of business, and then they will used this in assesing the decision making process.

1.4.1.1. The models of Romanian banks

Models drawn up by numerous Romanian banks within the methodology for crediting decision are based on the deterministic techniques.

The final scoring uses both the financial and non-financial data and classifying the credit risk in five categories:¹

- *Category A (standard credit)*: this rating reveals a high level of performance that will allow reimbursement of principal and interest; there are the signals of a harmonious relationship between the bank and client in the future;
- *Category B (credit under observation)*: this situation is similar to the first category in terms of the quality of financial performance, but it is anticipated that in the future these relationships can not be maintained;
- *Category C (substandard credit)*: this rating reflects a satisfying level of financial performance, but with the clear signals that it will deteriorate in the future;
- *Category D (doubtful credit)*: it involves a lower financial performance, with a cyclical manifested at short intervals;
- *Category E (credit loss)*: it reflects a very poor creditworthiness of the company; it will be unable to pay the principal and interest in the future.

Only the first three categories of credits will be taken into consideration for lending the client. Categories D and E involve a high risk for banks and therefore in these cases banks do not proceed to engage in borrowing.

The models of credit scoring drawn up by the main Romanian banks *use a combination* of the financial and non-financial criteria, as follows:

- a) *Commercial Bank*: eight financial criteria are calculated and they are determinant for the global rating; non-financial criteria only complete the global decision;
- b) *Transsylvania Bank*: five financial criteria are determined and two non-financial ones;

¹ The credit framework of Romanian National Bank in force available on the website Romanian National Bank www.bnro.ro

- c) *Romanian Development Bank*: uses only five financial criteria, it does not use non-financial criterion;
- d) *Raiffeisen Bank*: uses five financial criteria weighting 75 % in total rating and two non-financial criteria weighting the rest of 25 % in total rating.

1.4.1.2. The model of Romanian Chamber of Commerce and Industry (RCCI)

Romanian Chamber of Commerce and Industry (RCCI) determines a global score of business company in order to classify the national companies by level of performance. The final results are then published as a National Top Companies for the current year. These tops are then distributed to the Romanian and foreign companies, organizations, national and international institutions that promote and support businesses (embassies, business centers, export councils, International Chambers of Commerce and Industry).

For these objectives, the companies preliminary classified the companies by domains and size. Six domains of activity are used such as: R&D and High-Tech; Industry; Agriculture and Fishing; Constructions; Services; Commerce, Export and Tourism. Classification by size class of entities is done as follows:

- a) Micro entities: have up to 9 employees and an annual turnover or total assets net of up to 2 million euros;
- b) Small enterprises: have between 10 and 49 employees and an annual turnover or total assets net of up to 10 million euros;
- c) Medium-sized enterprises have between 50 and 249 employees and an annual net turnover of 50 million euros, equivalent, or total assets not exceeding of 43 million euros;
- d) Large enterprises: between 250 and 999 employees
- e) Very large enterprises: more than 1,000 employees.

Five performances criteria are selected as follows: I1 *Turnover*; I2 *Operating profit*; I3 *Rate of return* = (Current profit / Turnover); I4 *Work efficiency* = (Value added / Average number of employee); I5 *Return on investment* = (Earning before interest and taxes) / Total assets).

For the companies belong to *Commerce, Export, Tourism* domain, which acting exports and transactions within European Union countries, some corrections and adjustments in the above indicators are made, such as:

- *Turnover* is replaced by *revenues collected from exports and transactions within European Union countries*;
- There are not takes into account: operating profit, development effort, return on investment.
- Classification by size class is based on the number of employees.

The final business rating of the company are determined based on the following information which could be already known or could be calculated:

- *National average* (M1, M2, M3, M4, M5) for each of indicators (I1, I2, I3, I4, I5) which are determined depending on the domains and size of activities.
- *The simple score collected from each selected indicators* (N1, N2, N3, N4, N5) which are determined as a result of a ratio between de value of indicator for the company and the national average of that indicator $N = I / M$;
- *The weight of importance* given to each indicators depending on the domain of activity (p1, p2, p3, p4 and p5) as shown in the following table:

Table 4. The weight of importance used in assessing the global score by RCCI

Domains \ Criterion	Turnover I1	Operating profit I2	Profit margin I3	Work efficiency I4	Return on investement I6
Research / development /High-Tech	40%	10%	10%	20%	20%
Others domains	50%	20%	10%	10%	10%

Determining the global rating of business is realized as follows:

$$R = \sum_{i=1}^n p_i N_i \quad \text{where ,}$$

- R represents the global rating (the global score) of a company;
- p_i is the weight of importance given to each indicator "i";
- N_i represents the score achieved by the criterion "i", depending on the reporting of the national average of the criterion, for each firm ($N = I / M$) see above.

The model of business diagnosis RCCI has the disadvantage to not evidence the evolution of business activity but only the state for a certain period of time (one financial year). But the evolution of business is very important in order to predict the future risks about continuous activity. Another disadvantage of this model consist in not using a scale with minimum and maximum rating of 5 or 10 levels which could make more comparable the results. The RCCI rating could be a number around 1 and can be no matter how large or small compared to this reference, showing the position of financial business of a company comparing to sector average for a year.

However, by comparing the results of RCCI for every year of activity the real performances of business may be assessed.

1.4.1.3. The Ernst & Young model

Ernst & Young is one of the largest consulting and audit firms in the world, and is part of the four largest audit firms in the world called Big Four, together with KPMG, PricewaterhouseCoopers (PwC) and Deloitte Touche Tohmatsu.

Ernst & Young uses a deterministic algorithm to determine a score for company rankings.

The diagnostic methodology used by Ernst & Young is based on a score system (scores) awarded for different qualitative and quantitative criteria.

The quantitative criteria considered by Ernst & Young's to be most relevant for the financial standing of a company economic entity and used in the rating system are represented by the followings:

- a) **Activity size indicators**, reflected by EBITDA (Profit before interest, taxes, depreciation and amortization);
- b) **Growth indicators**, represented by the evolution of EBITDA for the last two financial years;
- c) **Profitability indicators**, represented by Return on Equity (ROE);
- d) **Liquidity indicators**, represented by Current Ratio;
- e) **Indebtness indicators**, represented by Debt to Equity Ratio;
- f) **Interest coverage interest rate** (Interest Cover Ratio).

The qualitative criteria used in Ernst & Young's business analysis relate to issues such as:

- a) **Size / length**; Other criteria analyzed refer to average number of employees and number of years of activity;
- b) **Corporate Social Responsibility (CSR)** activities and environmental initiatives developed in Romania;
- c) **Local brand** reflecting the contribution to local brand development and online presence;
- d) **Company type** (public or private).

Each indicator is rated based on a scoring grid of 1 to 5 points allocated for specific value ranges, where 1 point is the value attributed to the lowest performance for a specific specific indicator, and 5 points for the highest assigned value performance. Differentiated weights are allocated for each indicator category (quantitative and qualitative) and for each indicator, according to the importance assigned to it in substantiating the final rating, as is shown in Table 5.

**Table 5 The weights of the criteria used to calculate the total scores,
in Ernst & Young model**

Criteria	Weights
I. Quantitative criteria	P1=75%
1. EBITDA	p1=50%
2. EBITDA growth	p2=5%
4. Profitability (ROE)	p3=5%
3. Liquidity (Current ratio)	p4=5%
3. Leverage (Debt to equity)	p5=5%
4. Interest coverage	P6=5%
II. Qualitative criteria	25%
1. Number of employees	8,75%
2. CSR	5%
3. Brand local	2,5 %
4. Company type	8,75 %

1.4.1.4. Coface's model

Coface is an important business consulting company in the world, with a total of 99 countries worldwide. Among other services, Coface provides comprehensive reports on the financial condition of economic entities in the form of a "credit rating" that assesses the company's insolvency risk using a scale from 0 (maximum risk) to 10 (non-existent risk).

In setting the financial rating, Coface uses both qualitative (non-financial) criteria and financial criteria. The indicators analyzed include: business development, payment arrangements, how the company honors its obligations, changes in the number of employees etc.

1.4.2. Statistical models

These models are based on statistical techniques such as: Discriminant Analysis, Principal Component Analysis Logit/Probit Analysis and Hazard Model. The statistical techniques have the advantage of a higher bankruptcy risk prediction because of they suppress in a most expressive way, the trends of economic and financial activity of the company, following observations made on a significant period of time ago.

The earlier work of Beaver (1966) indicated that the financial ratios can predict the likelihood of bankruptcy. His univariate study evidenced that the financial ratios of bankrupt firms generally differ from those of no bankrupt firms and pointed out that the cash flow-to-debt ratio. The work began by Beaver was continued by Altman (1968) who introduced multivariate discriminant technique for predicting firms' failure (MDA). Both (Beaver and Altman) are considered pioneers of bankruptcy risk model based on financial criteria aggregates by multiple discriminant analysis technique.

Since 1968, the primary methods that have been used for model development are multivariate discriminant analysis (MDA). In a general approach, scoring method is based on a block rates (indicators) which are statistically determined, weighted by some coefficients in a mathematical model which could determine with some probability the future health of entity. Thus, the analyzed entity is assigned a note Z, called "ZETA score" which is a linear combination of several installments, as follows:

$$Z = a_1R_1 + a_2R_2 + a_3R_3 + \dots + a_nR_n, \text{ unde}$$

- R₁, R₂, R₃...R_n - represents the values of discriminant financial ratios;
- a₁, a₂, a₃ – represents selected importance of financial ratios..

Depending on the score value obtained, the entity shall be presumed healthy or bankrupt. Synthetically, multiple discriminant analysis is a statistical technique used to classify an observation in two or more groups, depending on observable individual characteristics.

Typology and evolution of used methods to predict failure risk

1. Scoring method developed by Altman for predict bankruptcy risk was the most common method for predicting the risk of bankruptcy, especially in the years 1960-1980.

After the study made by Altman, this type of analysis has not ceased to grow, creating other discriminant models for assessing the risk of bankruptcy by various schools such as:

- a) *Anglo-Saxon school* (Beaver, 1966; Altman, 1968,2000; Lis, 1972; Diamond ,1976; Yves Collongues, 1976; Taffler, 1974,1977,1980, 1982; Tisshaw,1976; Springate,1978; modelul Koh și Killough, 1980; Ohlson, 1982; Fulmer, 1984 ; Grammatikos și Gloubos ,1984; Peel, 1987, Keasey and Watson, 1986; Eidleman, 1995; Lennox, 1999; Christidis, 2010).
- b) *Continental European school* (Beerman, 1976; Weinrich, 1978; Conan&Holder, 1979; French Central Balance Sheets Model of French National Bank 1977-1979, French Comercial Credit Model; Poddig, 1995; Danemarks National Bank Model , 2004, Mateos and López, 2011;
- c) *Japanese school* (Ko, 1982; Takahashi et al. 1984; Tsukuda and Baba, 1994; Lee et al. ,1996; Jo et al., 1997; Sung et al., 1999; Lee 2001; Abdullah, 2008, Suntraruk, 2009);
- d) *Romanian school*; For the Romanian economy, authors concerns to predict bankruptcy risk have resulted in development of several statistical bankruptcy risk models:Cămășoiu Negoiescu's Model,1994; Ivoniciu's Model,1998; Băileșteanu's Model,1998; Anghel's Model, 2002; "C" Model (created by a group of professors from Craiova) in 2005 and the model developed recently by Armeanu et al. (2012) and Robu and Mironiuc (2012).

Although the score model it was successfully used almost half a century, due to ease of application and the high degree of objectivity, they has some drawbacks which limits its application in time and space. Some kind of limitation are (Siminică et al, 2004):

- The models retain a limited number of ratio, as significant, but the health of a firm is given by many other factors;
- The coefficients are determined according to the trend of ratio levels over time, regardless of some cyclical influences.

Another limits consist in fact that, being statistically determinate, these scoring model is applicable only in the industry or sector from which the sample was extract, as long as economic conditions remain unchanged. Periods of economic instability affects the correlation considered in building score function and require regular updating of models in order to adapt them to new economic and financial conditions. In this respect, besides the general models presented in the literature there were developed any others, which are created in the specific conditions of each country and in a specific period of time.

For instance, Mandru et al. (2010) considered that the Eastern contemporary firms are influenced by many external factors specific for the current eastern economic environment and for countries with economies in transition: the law usually characterized by insufficiency, restrictive changes, prohibitive financial and staff policies, high inflation, etc. In this respect, some kind of factors must to be included in the bankruptcy risk models.

Therefore, in practice it is necessary to complete the analysis based on score function with classical analysis of financial statements (accounting analysis of financial state). It is also necessary to make comparisons of financial ratios with sector averages and with safety levels assessed by specialists for these financial indicators.

2. Logit analysis and Probit analysis began to appear in the late 1970's, but did not overtake MDA in popularity until the late 1980's. Logit analysis and Probit analysis take into account the probability that the firm will go bankrupt. While the MDA model uses a score calculated from bankruptcy by a linear equation to determine the probability of bankruptcy, the Logit model predicts that probability is "a dichotomous dependent variable that is a function of a vector of explanatory variables" (Aziz and Dar, 2006).

Among authors who have used the Logit and probit models to predict bankruptcy risk include: Hanweck, 1977; Martin 1977, Ohlson, 1980; Mensah, 1983; Lo, 1984; Zmijewski, 1984; Casey and Bartczak, 1985; Gentry, Newbold and Whitford,

l985; Zavgren, 1985; Peel, 1987; Aziz and Lawson, 1989; Hopwood, McKeown and Mutchler, 1989; Bell, Ribar and Verchio, 1990, Lee (2001).

3. In the late 1980's, **neural networks** began to appear and, in the 1990's, became the primary method used in studies. Neural networks "are designed to emulate the human pattern recognition function" (Anandarajan et al., 2004). There are several different types of neural network methods; however, the details of these methods are beyond the scope of this paper. Basically, neural networks analyze inputs to find patterns and develop a model capable of a decision-making process. Several sample cases are run during the "training" mode, during which the network "learns" the decision-making process. The "testing" mode is used to validate the neural network model using hold-out sample data.

4. Another model used in predict failure used over time consist in **Hazard model** used by Lane, Looney and Wansley (1986), George(1991), Luoma and Laitinen (1991), Henebry (1996), Shumway(2001).

Shumway (2001) find three reasons to prefer hazard models for forecasting bankruptcy:

- The static models fail to control for each firm's period at risk. Static models do not adjust for period at risk, but hazard models adjust for it automatically.
- The hazard model incorporates time-varying covariates, or explanatory variables that change with time.
- The hazard model produces more efficient out-of-sample forecasts by utilizing much more data.

Based on the large study investigated by Bellovary et al in 2007, they conclude that the multiple discriminant analysis is the most common method of predicting the risk of bankruptcy, being used in 38% of the investigated studies.

In the 1980's and 1990's, the trend to use the logit was against multiple discriminant analysis models. Years 90's reflects an explosion of studies based on

neural network to predict bankruptcy risk, a quarter of the studies a quarter of all studies investigated being based on this technique.

Although different models are widely accepted, Aziz and Dar (2006) show that analyze multiple discrimination (MDA) and Logit models are very accurate with error rates of 15% each. In this respect, researchers have compared different models of bankruptcy and concluded that, despite some theoretical and practical limits, the Altman method is superior because of its simplicity, practicality and accuracy (Collins, 1980; Mossman et al, 1998).

Opposite, some authors (such as Abdullah et al. 2008) find in this study that the estimation sample of the Beaver hazard model has given an overall accuracy rate of 94.9 % which is higher than the MDA and logit model which reported 80.8 % and 82.7 % respectively. At the same part is Heffernan (2005) who appreciate that developed of bankruptcy models based on discriminant analysis (such as Altman model and Conan-Holder model) can easily induce error because, first, they rely on historical data. Even if at the time of their development these models were reasonably accurate, their accuracy diminishes over time if nothing is done towards updating the variables and reconsiderating/recalibrating of the models. (Armeanu, 2012).

Literature has provided extensive deterministically of statistical studies in this regard studies that have become over time more or less efficient just because of unprecedented economic evolution due to the scientific and technical revolutions that marked the beginning of the third millennium.

Even with the advantages of statistical models, we must be very careful when we used these. Just because for a better accuracy of failure prediction, the bankruptcy risk predictions model have to be created on the space and time in which the company under review operates. The sector of activity in which the business operates is also an extremely important criterion for a bankruptcy risk model to be truly predictable for the company we analyze. .

In addition, in building risk models the financial criteria should be supplemented by non-financial criteria (age, market share, the form of ownership, auditor critical comments, etc.) issues that come to complete the value of model.

Finally, we conclude that any model of bankruptcy risk, no matter how well designed, does not lead to a successful prediction rate of 100%. The reason consist in the statistical techniques used in their creation, techniques that involving from the beginning the existence of a risk margin.

Therefore, for a best prediction of risk bankruptcy, any manager (or any user) should be use both on bankruptcy risk models developed by statistical techniques (which have the advantage of providing information very fast) and deterministic models based on SWOT analysis combined with evaluation grids methods (which have the advantage of a exhaustive and complete diagnosis).

Many banks, rating agencies or government institutions are using the statistical techniques for assessing the rating business of theirs clients, as are presented in the following.

1.4.2.1. Danmarks National Bank's model

In Denmark, Lykke et, al (2004) by using the Logit regression, developed an accounting-based model developed in Danmarks National Bank to predict failure rates in the Danish corporate sector. The estimated accounting-based failure-rate model contains a number of nine variable (five quantitative and four qualitative-dummy variable). The selected qualitative criteria are: *capital reduction; company age; form of ownership (private or public); critical auditor comments*.

The result of this study (encapsulated in Danmarks National Bank) reflects the major importance of non-financial indicators comparing with financial indicators, as follows:

- the company which has a critical auditor comments has the *3 times higher* probability of failure than a company without a critical remark of auditor;

- the company which reduced its capital under the previous (initial) level has *2.5 times higher* probability of failure than a company with non reduction of the capital;
- the company which has in majority a public property has *1.5 times higher* probability of failure than a company with private property;
- a new company (under five year of business) has *1.4 times higher* probability of failure than a company over five years in business;
- every other five financial variables registered levels of odd ratio (probability to failure relative to a non-failure) under 1.3 reflecting an inferior importance comparing with the non-financial variables selected.

1.4.2.2. Dun& Bradstreet's model

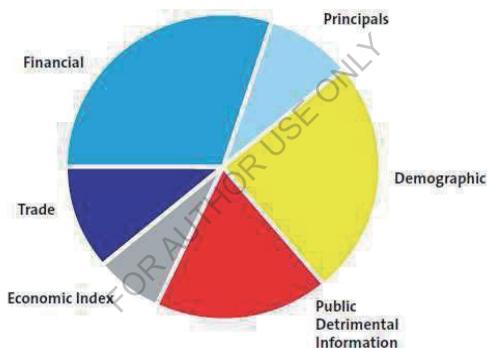
Dun&Bradstreet is a big consulting company in the world, and has developed a score model for predicting company failure. D&B Failure Score model predicts the likelihood that an organization will obtain legal relief from its creditors or cease operations over the next 12 month period. The Failure scorecard also looks for events signaling the onset of failure, such as a meeting of creditors, administrator appointed, bankruptcy, receiver appointed, and petition for winding-up. D&B model is based on a sample of 2.6 milion UK business, from which 2.5 million are situation in a “Good” area of failure risk and 70 thousand businesses are in a “Bad” area of failure risk. The obtained scorecard ha characteristics that differentiate “Good” (healthy trading business) from “Bad” (failed or distressed businesses).

Over 70% of variables taken into account in D&B Failure Score are non-financial variables and 30 % are financial ones. These variable used in the D&B Failure Score are :

- *Financial* – Ratios and trends taken from annual and interim accounts;
- *Demographics* – Including business age, location, line of business and corporate linkage;

- *Public detrimental information* -Such as CCJs, mortgages/ charges and the legal pre-failure events (administration, receivership, bankruptcy, etc);
- *Principals* – The principal's experience and performance of associated businesses;
- *Trade Experiences collected through the D&B Trade Programme.* Businesses regularly provide their experiences of the payment habits of businesses they are trading with.
- *Economic Index* – The Economic Index reflects the risk to different industries when the economy changes.

Graphic 1. The areas of information used in the D&B Failure Score



Source: D&B Rating Guide (2009)

The D&B rating score is built on a scale of 0 to 10 where 0 represents lower stability (0 = more risk) and 10, higher stability (10 = less risk). This score relates to the *probability of business closure in the next six months*, as follow:

Table 6. Probability of failure in D&B Model

Score	Probability of failure	Score	Probability of failure
10.0 --9.1	0.66%	5.0 --4.1	3.66%
9.0 --8.1	1.04%	4.0 --3.1	4.58%
8.0 --7.1	1.41%	3.0 --2.1	6.12%
7.0 --6.1	1.74%	2.0 --1.1	8.76%
6.0 --5.1	2.58%	1.0 --0.0	15.08%

Source: D&B Rating Guide (2009)

1.4.2.3. Rating agencies' models

Many large rating agencies such as Standard & Poor's (S&P), Moody's and Fitch use the statistical techniques to assess the credit rating as a financial indicator to potential investors of debt securities such as bonds. Agencies apply their own methodology in measuring creditworthiness and uses a specific rating scale to publish its ratings opinions. Typically, ratings are expressed as letter grades that range, for example, from 'AAA' to 'D' to communicate the agency's opinion of relative level of credit risk.

The general meaning of Standard & Poor's credit rating opinions can be summarized as follows:²

'AAA'—Extremely strong capacity to meet financial commitments. Highest Rating.

'AA'—Very strong capacity to meet financial commitments.

'A'—Strong capacity to meet financial commitments, but somewhat susceptible to adverse economic conditions and changes in circumstances.

'BBB'—Adequate capacity to meet financial commitments, but more subject to adverse economic conditions.

'BBB-'—Considered lowest investment grade by market participants.

'BB+'—Considered highest speculative grade by market participants.

'BB'—Less vulnerable in the near-term but faces major ongoing uncertainties to

² Standard & Poor's Credit Ratings Definitions & FAQs, <http://www.standardandpoors.com>

adverse business, financial and economic conditions.

‘B’—More vulnerable to adverse business, financial and economic conditions but currently has the capacity to meet financial commitments.

‘CCC’—Currently vulnerable and dependent on favorable business, financial and economic conditions to meet financial commitments.

‘CC’—Currently highly vulnerable.

‘C’—Currently highly vulnerable obligations and other defined circumstances.

‘D’—Payment default on financial commitments.

1.5. Components of business diagnosis

A global diagnosis of a company's business targets two major dimensions:

A) The external dimension of the diagnosis, referring to a diagnosis of the external (competitive) environment. It aims identifying the strengths and weaknesses of the entity, highlighting the opportunities and the risks in relation to its competitors in order to provide objective strategic support;

B) The internal dimension of the diagnosis, referring to a diagnosis of the internal environment. It aims at highlighting the internal performance of the business with the reflection of strengths and weaknesses in relation to different reference levels (optimal levels, sectorial average levels, levels of industry leaders, etc.).

Referring to an internal dimension of diagnosis, it can be designed in relation with the evolution of economy and the evolving of new concepts that required new rules for assessing the business performances.

A. Basing on the classical approach of performance concept stated by Milton Friedman (1970), maximizing the financial results for shareholders is the highest social responsibility of a company. Under this approach, only the economical and financial result are the main important reason for survive in economy.

B. The moderns concepts of performances are based on value creation for all the stakeholders (management, investors, staff, suppliers and clients, competitors, banks, state etc).

One of the ways to achieve excellence is represented by performance, and currently there is more and more talk about **global performance**.

The concept of *global performance* is present in literature to evaluate the application of the enterprises' strategies in the context of sustainable development. The concept is the reflection, at the management system level, of the macroeconomic concept of sustainable development (Capron & Quairel, 2005). This new performance approach has three objectives: the increase of the economic-financial performance of the enterprise, the development of environment effectiveness and favoring social development. The Triple Bottom Line approach introduced by Elkington (2002) concentrates entities not only on added economic value but especially towards the social and environmental values that it creates, or, on the contrary, it destroys. The TBL concept means „economic prosperity, respecting the environment, respecting and ameliorating social cohesion”. (Pesqueux, 2002, pp.157). For Reynaud (2003, pp.10) and Baret (2006, pp.2) global performance represents the aggregation of **economic, social and environment performance**. Thus, the **Triple Bottom line approach** are basing on the three pillars, namely:

- *ECONOMIC: Maximize economic performances* meaning maximizing performance for shareholders. This goal can be achieved based on traditional accounting financial criteria, (based on income, profitability, cash flow) or criteria derived from the theory of value creation for shareholders (Economic Value Added, Market Value Added).

-*SOCIAL: Maximize social performance* which requires maximizing performance for all participants in economic life (stakeholders) this means from employees to the community, from suppliers to customers and from investors and creditors to state, from managers and corporate governance and maintaining the center attention of the shareholders.

-ENVIRONMENTAL: Maximize environmental performance which implies an activity that does not affect the surrounding community and environment, thus developing the best environmental performance in relation to the environment

For each of three pillars is assigned a secondary diagnosis namely economic(and financial) diagnosis, social diagnosis and environmental diagnosis. These diagnoses are conducted to a global diagnosis of entire company's activity.

The new conceptual framework change radically the final aim of a company because it is not anymore maximizing the value of shares held by shareholders, but it is maximizing value for all stakeholders, where shareholders are just another category of stakeholders.

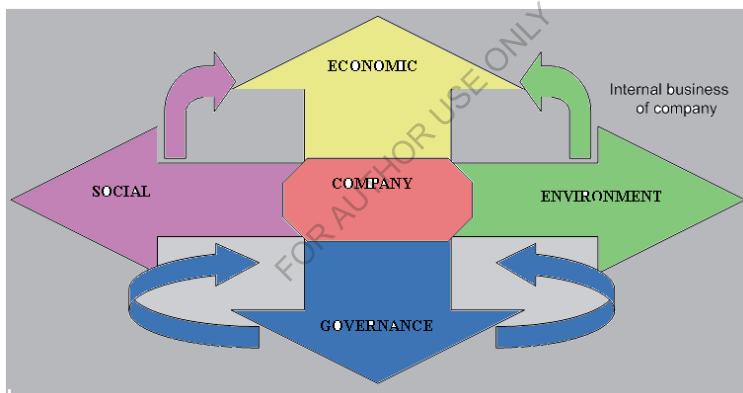
Starting to the financial crisis from the beginning of the 21st century, a new fourth dimension of performance has evolved in the literature and also in the current activity of various rating agencies, namely *CORPORATE PERFORMANCE* dimensions of performance. Maximizing economic, social and environment performances can be done only in the context of a best collaboration at the level of corporate governance structures through which conflicts of interest are diminished. An efficient corporate governance allows shareholders to make sure that the enterprises where they own social parts are led according to their interests. In this respect we follow aspects referring to: the competence and the composition of the Board, the administrators' independence, the managers' remuneration, respecting the shareholders' rights and the principle „a share equals a vote equals a dividend”, respecting the minor shareholders, information transparency, guaranteeing the reality of the published information, the quality of internal control). Assessing of ESG scores (Environmental, Social and Governance), as non-financial scores of business companies, became an important step in determining the real performances of business today. Around the world, *extra-financial rating agencies* (Innovest – USA, Vigeo – France, SiRi Company – Switzerland, Ethibel – Belgium, ELRiS – England) come to assess and rate the policies of social, environmental and governmental responsibility of the large, marketable companies. Big international extra-financial rating agencies have developed

partnerships with the companies that underlie the stock market indexes to create indexes reuniting the companies which obtain the highest scores in the social, environmental and governmental domain (*Dow Jones Sustainability Indices – DJSI; FTSE4GOOD; ASPI Eurozone*) (Mironiu, 2009).

We may conclude that the Triple Bottom Line Approach became The Quadruple Bottom Line, by maximizing the economic results only if one may satisfy the interests of all partners in business: shareholders, employees, suppliers, customers, creditors, state etc.

Quadruple Bottom Line approach in describing the business performance can be design as in the figure below:

Figure 2. Representing the internal business diagnosis of company



Source: own projection

In the present context of the economy, the modern management of performance is dominated by the following concepts: **governance, performance, value and stakeholders.**

CHAPTER 2. DIAGNOSIS OF THE COMPANY'S EXTERNAL DIMENSION

2.1. General approaches

Under the current circumstances of the rapid business globalization and transgression of investors through multi-corporations, for any investor who wishes to penetrate the capital market of a country, it is very important to be aware of the business and competitive environment corresponding to the respective company.

Thus, one may speak of the diagnosis of a company's external environment. This type of diagnosis will complete the internal diagnosis that reflects the internal potential of a company, respectively a diagnosis based on the evaluation of activity's internal performance.

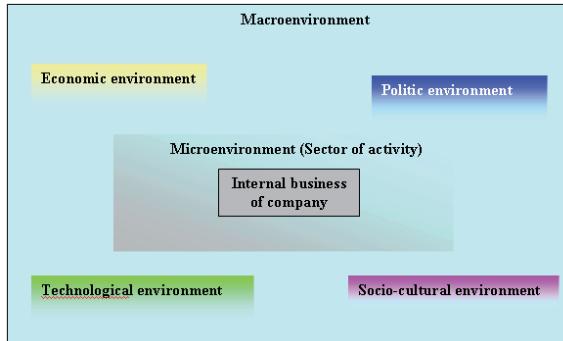
A company's external environment consists in many external forces, each of them having its own interests. The secret of survival is to choose the best strategy which can transform all the company's external risks through its advantages.

The external environment is characterized from the perspective of opportunities and threats. Opportunities represent the chances provided by the business environment of the company, favorable situations or circumstances that might produce significant advantages for the company. Threats represent negative factors that might influence the activities of the company and are expressed through unfavorable events that might lead to losses and prejudices. By comparing these two elements, there can be determined the appeal of a certain activity. The ideal case is when there are significant opportunities and reduced threats. The most unwanted case is when opportunities are few and threats are numerous.

The external environment will provide information regarding legislative issues, market characteristics, the demand for a certain type of product, new competitors entering the market, the power of the current competition, the negotiation power of suppliers, changes in the consumers' structure etc.

The synthetic form of the global environment of the company may be designed as follow:

Figure 3.The external dimension of a company



Source: own projection

Economic environment affects the purchasing power of potential buyers and the cost of capital, and could be represented by the following factors: economic growth rate, interest rate level, exchange rate of the national (local) currency relative to the main currencies, inflation rate, etc ..

Political environment refers to the legislative and legal regulations which consist the legal framework for the business, and they include: tax policy, labor policy (including social protection measures, etc.), environmental regulations, trade policy, etc.

Socio-cultural environment focuses on the demographic and cultural aspects. This category of factors directly affects consumer needs as well as the size of potential markets. Examples may include: health status, population growth rate (natural growth), age pyramid, safety level etc.

Technological environment may influence the diminishing of the barriers to entry, the reduction of the minimum profitability threshold and the outsourcing decisions, the activity in the field of research-development, the technological incentives, the technological innovation rate (rhythm) etc.

Michael Porter believes that the first most important factor regarding a company's return is its *sector of activity*. Therefore, the analysis of the competition

from the respective industry becomes the main target when the goal is represented by the formation of the general policies that should result in a general growth of the company's value. Competition analysis implies the identification of the main rivals of the company, by performing a study of their industry, as well as of their market (Kotler, 1998, p. 599).

In general, a company may have to deal with a great variety of **obstacles** as far as its activity is concerned, obstacles that may bring the respective company into a position of insolvency, but, more often, difficulties arise from *outside the company*, caused by competition. Among the most frequent **external factors**, we can mention:

- Industry;
- Increased national and international competition;
- The size of the company;
- The bankruptcy of a major supplier, which supplies some parts or materials that are essential for the continuity of the company's activity;
- The lost of an important client, or it's bankruptcy;
- The bankruptcy of a bank, with which the company had frequent financial relations;
- The apparition of new laws and regulations regarding security and protection of the environment, according to European regulations;
- The economical, financial, social, fiscal, legal and even ecological characteristics of the company's external environment;
- The cycle of life of the activity;
- Periodicity and the fluctuations of the activity;
- Lack of clear objectives in future development of activity, or misunderstanding of objectives by owners or managers;
- Poor selection of markets, or lack of markets;
- Poor or no marketing policy;
- Continuous points loss at the stock market;
- Poor reaction of the management to conjunctural changes;

- Inadequate establishment of the entire or parts of the business;
- Future projects that are not compatible size-wise with the possibilities of business development.

These factors are important since the company's activity depends on its own resources and actions and, on the other side, on external influences, because any entity functions in a specific environment.

2.2. Steps in assessing a diagnostic of the company's external dimension

The analysis of a company's external environment was initiated by Michael Porter, who presents "the five competitiveness forces" as follow:

- Threats to Corporate survival (competition rilvaly);
- Potential entrants;
- Substitutes;
- Suppliers;
- Buyers.

A. The competitor among the companies already present in the respective industry determines the competition degree within the industry, resulting from the existing competition between companies for increasing their own market shares.

B. The threats represented by potential entrants, the entry decision of these companies may produce, according to their power, instability in the industry.

C. The danger represented by substitutes products, meaning the actual competition.

D. Negotiation ability of buyers and distributors. These may also be seen as forces, meaning that, through their actions, they attempt to obtain the maximum amount of goods and services for the minimum price, a fact that reduces the profit margins of their partners.

E. Suppliers' negotiation ability results from their attempt to have the best possible place in the profitability cycle, by increasing sale prices or by maintaining them at the same level even if the quality of the delivered goods is lower.

Another four forces results from the main forces mentioned above, such as::

- Government ideology & policy;
- Fashion and fickleness;
- Complementors;
- Lobby and Interest groups (Macmillan and Tampoe, 2001).

A. Diagnosing competition rivalry

Rivalry between companies may appear as far as prices, advertising, quality, new product lines and improvement of services are concerned. Rivalry exists because, at a certain moment, one or more customers attempts to or hopes to improve his position and market status. Such behavior will lead to reprisals from competitors, affected by the respective action.

The intensity of business rivalry results from the interaction of the following structural factors:

- Number of competitors;
- Industry's growth rhythm;
- Different types of products;
- Inventory costs and fixed costs;
- Capacity changes;
- Competition diversity;
- Exit barriers.

Michael Porter believes that there are three main strategies of position taking in the competition milieu that leads, in an objective manner, to profit and company value increase, as follow:

- Domination through prices. The company's goal is to have the lowest production and distribution prices so that the price of its products should be lower than the competitors' and to achieve a higher market share;
- Differentiation. The company focuses on creating differentiated marketing products and programs in order to become the leader if its industry;
- Focus. Companies using this strategy focus on a limited number of market segments.

According to several renowned authors in marketing (Kotler, 1998, p. 581), companies that will best apply *one* of these strategies, will obtain the biggest profit. It is important that companies should have a clear strategy in order to be in advantage, a strategy that would guarantee their market excellence. Companies that attempt to obtain good results in all the above mentioned areas, will, eventually, obtain none.

The company's position in a market (P_{M_i}) may be calculated as the relation between its net turnover (NT_i) and market's net turnover (NT_M) – obtained by adding the net turnovers of all the companies from the respective industry:

$$P_{M_i} = \frac{NT_i}{NT_M} \cdot 100$$

If the indicator is near 100, this means that the position of the company on the market is strengthened as far as competition is concerned.

From the point of view of its competitive position, a company may belong to one of the following categories:

Figure 4. Hypothetical market structure

Leader company	Challenger company (fights for leadership)	Pursuer company	Companies specialized in market segments
40 %	30 %	20 %	10 %

Source: Kotler (1998)

B. Diagnosing the threat represented by the entrance in the industry of new potential competitors

The new potential competitors, together with the new production capacities and the desire to obtain an as good as possible market position, bring along important resources. As a result, all these may lead to either a price decrease, or an increase of the existing competitors' prices, both situations triggering the decrease of return on capital, thus resulting the decrease of the industry's profitability.

The threat represented by the new-comers is related to the importance, the nature of entry barriers and the reaction of the already existing competitors to the potential competitors.

C. Diagnosing the threat represented by substitution products

In order to identify those products that represent substitutes for another company's products, these substitutes have to use the product function criteria, that is the fact that the substitution product should be able to perform the same functions as the original one.

The following two categories of substitution products that represent a danger to the company's product and that should be taken into account are:

- Those that tend to improve the quality/price report as compared to the products from the analyzed industry;
- Those produced in industries that ensure high rates of average profit.

D. Diagnosing customer's negotiation power

Customers continuous quest for obtaining discounts from sellers, as well as more consistent post-sale services, together with better quality. They negotiate and exert pressure over competition relations by continuously comparing a provider to another provider.

The diagnosis of customers' negotiation power refers to the following:

- *Describing customers.* This refers to the number and distribution of customers, the fragility of the relation with customers, the amount of internal customers as compared to external ones and its dynamics for a 3-5 year period, financial solidity and loyalty of main clients.
- *Organization of distribution.* This refers to the identification of the distribution network, efficiency of sale services and performance of post-sale services. This data are completed with other information referring to: promotional campaigns, providing post-sale services, discounts for loyal customers. The juridical form of distribution (exclusively concessionary), objectives of the distribution network, obligations of the distribution network and the way these obligation are fulfilled (forming inventories, hiring sale persons etc.), obligations of the company towards the distribution network, conflicts and litigations with distributors.

E. Diagnosing suppliers' negotiation power

Suppliers may have a high negotiation power over their customers, being entitled to increase their sale prices, or to decrease the quality of their products and services. Thus, they may influence the profitability of an industry, compressing it if the customers cannot mirror these changes in the price of their products.

The diagnosis of suppliers' negotiation power refers to the following:

- *Describing suppliers.* This includes suppliers' number and structure, the criteria used in choosing the suppliers (distance, traditional relations, price, quality, payment facilities, transportation facilities and guarantees), the dependence relation to certain suppliers, service quality during guarantee periods etc.
- *Organization of supply.* This refers to the structuring of supply sources on markets and main suppliers; the dependence on certain suppliers; the maximum amount that can be supplied in a determined period of time,

quality of purchased raw materials, transportation and payment conditions, discounts, bonuses.

Market evolution in the current economic context, with significant impact on the strategic position of the company in the market environment is characterized by a globalization tendency, a fact that expands competition dispute to a local, regional, national and, also to international level.

2.3. Assessing a fast diagnostic model of the company's external dimension

A fast model of the company's external dimension based on the SWOT analysis method combined with the evaluation grids method, may be computed, by using the following steps:

a) Selecting several representative indicators (criteria) for reflecting the competitive position;

We select for our model ten main indicators for reflecting the external dimension in which company activates and its competitive position, as follows:

- 1. Market position (market quota);*
- 2. Growth tendency;*
- 3. Competition structure;*
- 4. Distribution market;*
- 5. Customers' characteristics;*
- 6. Customer loyalty;*
- 7. Different types of products;*
- 8. Ratio between Price and Quality;*
- 9. Distribution position/organisation;*
- 10. Brand image.*

b) Assessing qualitative criteria of the investigated area;

For this purpose we have to determine the strong and the weak points of the company' activity as compared to the competition, identified according to the

selected criteria, as well as the effects of the competitive milieu over the analyzed company, effects expressed as ***threats and opportunities***;

Synthetically, these may be presented as follows:

The strengths points of the company's activity may be represented by the followings: resources of the company on the market; the company has a good market position for most of its products and services; traditional customers represents over 50 % from the total number of customers of the company; there are no quantitative restrictions in raw materials and materials supply; the distribution is organized through own networks; very good product quality; traditional relations with beneficiaries; the company functions in a significant competitive milieu, but, through its products, it becomes competitive now and in the future; The company is the only producer or distributor.

Weaknesses points may include: lack of financial resources leading to the interruption of supply; the current production capacity and its technical level represents a limit in entering other market segments; decrease (in real terms) of the incomes obtained from important activities; distribution through middlemen; Weak product quality; Performing activities with no or little profitability.

Market opportunities may include: fast market increase; possibility of expanding products and/or services classified list; demand for new products and/or services on existing or on new markets; possibility of vertical integration; Stagnation or regression of rival companies; the possibility of closing favourable alliances, agreement etc.; the possibility of closing leasing, factoring, franchising deals; increase of export possibilities; Product diversification; Using new distribution networks.

Market threats could be represented by the following: adopting certain legislative or normative restrictive regulations with unfavourable effect; entering a period of economic recession on a national or international level; unfavorable demographic changes; changes of customers' needs, tastes or preferences; slower market increase, market stagnation or even recession; new entries on the market;

Increasing demand for substitution products; Increasing pressure of the competitors; Increasing negotiating power of suppliers and/or customers;

- Decrease of purchasing power ;
- Danger of substitution products ;
- New competitors appearing ;
- Promotional activity of rival companies ;
- Decrease of sale price.

c) Ascribing scores from 1 to 5 for the competitive environment issues:

- if it is calculated only the status and the evolution tendency, the simple form of the chart as follow will be used:

Table 7. Chart for evaluate the status OR the tendency of an indicator

Note (N)	1	2	3	4	5
Status	Critical	Weak	Mean	Good	Strong
Tendency	Sudden impairment	Slow impairment	Maintaining	Slow improvement	Sudden improvement

- if there are evaluated at the same time both the level and the tendency, there will be used the complex, matrix-like chart, as follow:

Table 8. Chart for evaluate the status AND the tendency of an indicator

Tendency/Status	Critical	Weak	Average	Good	Strong
Sudden improvement	3	3.5	4	4.5	5
Slow improvement	2.5	3	3.5	4	4.5
Maintaining	2	2.5	3	3.5	4
Slow impairment	1.5	2	2.5	3	3.5
Sudden impairment	1	1.5	2	2.5	3

d) Ascribing importance scores for each indicator according to the position in the evaluation chart, taking into account the type of industry.

e) The calculation of the average score and also the hierarchization of companies in the market, thus highlighting the competitive advantage of each company. The average score is determined according to the relation:

$$\bar{N} = \sum_{i=1}^n p_i x_i N_i , \text{ where}$$

- p_i represents the importance estimates ascribed to each indicator;
- N_i represents the score of each indicator.

f) Identifying the diagnosis category according to the table below; for this purpose, the following chart of global evaluation of the external environment proves to be very useful:

Table 9 . Chart of external environment diagnosis

State of indicator	Diagnosis of external environment	
	Rating score	SWOT Classified
Strong	5	STRENGHT diagnosis- Category A MAXIMUM OPPORTUNITY
Very good	4.5	
Good	4	GOOD diagnosis –Category B OPPORTUNITY
Satisfactory	3.5	
Average-acceptable	3	AVERAGE/ACCEPTABLE diagnosis – Category C UNCERTAINTY
Non satisfactory	2.5	WEAK diagnosis –Category D THREAT
Weak	2	
Very weak	1.5	CRITICAL diagnosis – Category E MAXIMUM THREAT
Critical	1	

g) Drawing up interpretation, recommendations and future action strategies.

Table 10. SYNTHESIS A DIAGNOSIS OF EXTERNAL ENVIRONMENT'S

Indicators	Observations	SWOT diagnosis	Points	Imp.	Scores	Measures
1. Market position (market quota)	Does the company have a good market position for most of the products and services, especially consumables?	...	n1	p1	N1xp1	...
2. Growth tendency	- Company incomes slightly increasing - Increasing demand - The industry is growing	...	n2	p2	n2xp2	...
3.Competition structure	- High competition level ? - Does not represent a problem on the internal market - There emerged many flexible private	...	n3	p3	n3xp3	...

	companies ?					
4. Distribution market	-Traditional relations with beneficiaries ? -Are traditional clients significant? - Export incomes increase ?	...	n4	p4	n4xp4	...
5. Customers' characteristics	- Stable relation with customers -The number of customers increases; -Interests in attracting more types of customers	...	n5	p5	n5xp5	...
6. Customer loyalty	- Post-sale services? - Discounts ? - Promotional products?	...	n6	p6	n6xp6	...
7. Different types of products	-Is there a significant difference between the company products and the competitors' products?	...	n7	p7	n7xp7	...
8. Price/Quality	-Accessible price? - Respects the quality standards of the products?	...	n8	p8	n8p8	...
9. Distribution position/organization	- Directly from storing place? - Is there an own distribution network?	...	n9	p9	n9xp9	...
10. Brand image	- Is it representative?	...	n10	p10	n10xp10	...
Diagnostic of external environment	OPPORTUNITIES – THREATS			100 %	$\bar{N} = \frac{n}{\sum_{i=1}^n n_i x_i p_i}$...

The formulation of final conclusions starts with Michael Porter's statement according to which "a company is able to have better performances than its rivals only if it established a difference that it can maintain". In order to establish this difference, any company will have to be familiar with the strong points as well as the weak points of its business and, based on these points, to appreciate the opportunities and threats brought by the competition milieu as far as its activity is concerned. The higher the opportunities and the lower the threats, the more solid the diagnosis of the competition milieu is, with low risks of future problems

regarding the clients' activity. Any investor has to be aware of these details regarding the business and competition milieu of a company, as well as its influence on the future of the company. A quantitative and qualitative diagnosis following the model presented above is more than useful for every capital investor.

Example

We exemplify the case of Anaconda Company which activates in Electronics (Consumer & Office) domain since 1960. A synthesis of the diagnostic external environment for Anaconda Company can be designed as follow:

Table 11. SYNTHESIS A DIAGNOSIS OF EXTERNAL ENVIRONMENT

Indicators	Observations	SWOT diagnostic	Points
1. Market position (market quota)	The company has a good position on the market for most of its products and services especially for consumer goods.	Strong	5
2. Growth tendency	Declining incomes, but this is largely due to the international financial crisis.	Mean/ Impairment	2
3.Competition structure	High level of competition - no problems on the domestic market - many flexible private companies have appeared.	Good	4
4. Distribution market	There are traditional relationships with the beneficiaries. Traditional customers have a 50% share in the industrial sector. Increase export earnings	Strong	5
5.Customers' characteristics	Stable customer relationships; increasing the number of clients; concerns for the diversification of the clientele structure in order to cover a wider range of clients	Strong	5
6.Customer loyalty	Post-sale services; promotional actions are provided; also guarantees	Strong	5
7. Different types of products	Forte.	Strong	5
8.Price/Quality	Accessibility as a price; integration into the required quality standards for its products.	Strong	5
9. Distribution position/organization	Own distribution network	Strong	5
10. Brand image	High brand.	Strong	5
Diagnostic of external environment	MAXIMUM OPPORTUNITY		4.6

* In the aggregation of scores, the weights of importance are used.

Strengths:

- The company holds a strong position on the market;
- There are traditional relations with the beneficiaries and it provides consultancy and post-sale services;
- Traditional customers have a 50% share in the industrial sector;
- There are no quantitative restrictions on the supply of raw materials and materials;
- Anaconda Company operates in a significant competitive environment, but its products become competitive and has prospects for further capitalization of production;
- The company holds an important position on the national market;
- The supply and sales market is not a restriction in the company's activity;
- The company holds the exclusivity clause for the products offered;
- Compared to competition, the company presents the advantages of the quality and price of the products offered as well as the long-term cooperation with the local administration;
- The distribution network is realized through direct relations with the beneficiaries.

Weaknesses:

- Lack of financial resources can obstruct supply at any time;
- At present, too much indebtedness makes it possible to conquer new market segments.

Opportunities:

- Expansion on foreign markets;
- Increase market share both in the domestic and external environment.

Threats:

- Development of the competitive sector, both internally and externally;
- Concentration of clients and suppliers portfolio;
- The current economic and financial condicions, thus reducing the demand for the products offered.

The Opportunities / Threats report of the environment reflects a very good state in relation to the competitive environment.

Measures:

- It is necessary to orientate the company's concerns for conquering new segments of internal and external market;
- It is necessary to maintain or even increase the quality of the products by providing an operative technical control by raising the qualification staff, with the aid of substantial material incentives for some quality products.

CHAPTER 3. FINANCIAL DIAGNOSIS: A MAIN COMPONENT OF BUSINESS DIAGNOSIS

3.1. Evolving concepts of financial performances

For a long time, global performance was reduced to the *financial dimension* based on the *shareholders' paradigm* by Milton Friedman (1970) who considers that maximizing financial results for shareholders is the biggest social responsibility of a company.

The financial performances is based on the information publicly provided by accounting data which consists in the financial statements. According to International Financial Reporting Standards, the main product of accounting consist in providing the financial statements which contains the following components:

- Statement of financial position or Balance sheet;
- Income statement or Profit and loss account;
- Statement of Changes in Equity;
- Statement of Cash Flows;
- Notes of the Financial Statements.

Accounting represents the main source of data and information of the economic information system, it produces a significant share of economic information conveyed in an economical entity. According to Matiș (2003, p.20), accounting represents the main source of economic data and information, since it provides 30–35% of the economic information corresponding to a company. Therefore, a very important role is held by the financial statements that must be drawn up and published by all the companies.

In our opinion, the accounting system represents the main source for meeting the needs of business company diagnosis because of the following causes:

- a) It is expressed in monetary units, which allows a uniform, comparable report of all economic phenomena and processes carried out in an entity.

b) It realizes the connections among all the major information systems of the entity, such as those related to marketing, personnel, production, research, development activities and finally being able to compete in achieving the overall objectives of the entity.

It allows internal and external users of accounting information to provide an overview of the whole activity.

Under IFRS's approach (2012) profit is frequently used as a performance measurement. Revenues and expenses are elements which are directly linked to profit evaluation (IFRS 2012, "General conceptual framework" par. 4.24).

Cormier and Magnan (2003), from a study made on a sample of 300 companies from France, USA and Switzerland, draw the conclusion that the most representative financial indicators for the financial performance are: *net profit, operating profit, operating cash-flow, retained profit*.

Cohen (1995) assimilates performance with *efficiency, following the results obtained by* the enterprise in rapport with the resources they used. Among the financial performances selected as representative there are: *net profit, earning before interest and taxes and cash-flow*.

Pintea (2011) makes a top 10 financial indicators which are representative for the financial performances of a company, after using the questionnaire technique applied on various respondents from the public and private environment from Romania. These indicators are: *added economic value, return on investment, return on equity, operating cash-flow, liquidity indicators, solvency indicators, total shareholders return, earning per share, net profit and turnover*.

Various authors were preoccupied by the selection of financial indicators in order to create predictive models of business performance through which they could evaluate the bankruptcy risk.

Beaver (1966) found that *Net Income to Total Debt* had the highest predictive ability (92% accuracy one year prior to failure), followed by *Net Income to Sales* (91%) and *Net Income to Net Worth, Cash Flow to Total Debt, and Cash Flow to Total Assets* (each with 90% accuracy).

Altman (1968, 2000) in his studies found that financial ratios measuring the company's *liquidity position, profitability and solvency* predicts potential failure

Ohslon (1980) finds a negative correlation between the probability of failure and the *size, profitability and liquidity* of the company. Also, he found that the probability of failure is positively correlated with the company's gearing.

Dugan & Zavgren (1989) and Chen & Shimerda (1981) identified seven financial factors that may help predict financial distress: the return on *investment, leverage, capital turnover, the short-term liquidity, cash position, time payable and inventory*.

Lennox (1999) finds that *profitability, leverage, and cash flow* have important effect on probability of bankruptcy.

In Korea, Nam and Jinn (2000) stated that *financial expenses to sales, debt coverage and receivables turnover* were important to explain bankruptcy.

In Malaysia, Low et al. (2001) found that the *cash flow ratios* were significant in explaining bankruptcy during the period 1996-1998; while Mohamed, Li and Sanda, (2001) found that the *leverage ratio and efficiency ratio (total asset turnover)* were found to be significant during the period 1987 to 1997. Zulkarnain et al. (2001) found in his study that *total liabilities to total assets, sales to current assets, cash to current liabilities and market value to debt* were significant in explaining financial bankruptcy in Malaysia during the period 1980 to 1996. Later, Abdullah et al. (2008) found *leverage ratio, net income growth and return on asset* to be an important predictor of distressed companies in all the models used (MDA, Logit and Hazard Model)

In Denmark, Lykke et. al (2004) by using the logit regression, developed an accounting-based model developed in Danmarks Nationalbank to predict failure rates in the Danish corporate sector. The estimated accounting-based failure-rate model contains a number of key financial ratios that are commonly used in strategic accounting analysis such as: the company's liquidity position, profitability and solvency. Other variables are *age and size* of the company, *form of ownership* and *critical auditor comments*.

In Romania, in the bankruptcy prediction models developed for the Romanian space by various authors (Cămășoiu Negoescu 1994, Ivoniciu, 1998; Băileșteanu, 1998; Anghel 2002; Robu-Mironiuc, 2012) the most prevalent financial ratios are: *cash-flow/active, debt / assets, turnover of claims / liabilities / current assets* and so on.

Investigating a vast literature (over 170 studies focus on prediction failure problem) Bellovary (2007) found among those 752 factors which are utilized in the individual studies the first ten financial ratios, as follows: 1) *Net income / Total assets*; 2) *Current ratio*; 3) *Working capital/Total assets*, 4) *Retained earnings / Total assets*; 5) *Earnings before interest and taxes (EBIT) / Total assets*; 6) *Sales / Total assets*; 7) *Quick ratio*; 8) *Total debt / Total assets* ; 9) *Current assets / Total assets*; 10) *Net income / Net worth*.

From the investigation of specialized literature we notice the fact that in expressing financial performance the most utilized indicators are expressed in relative form, under the form of financial ratios, more than the indicators in absolute values. The usage of financial ratios has the advantage that, comparing with absolute levels of indicators, they provide a degree of general applicability. Using financial ratios largely removes limits generated by the size firms.

By using financial ratios, the accuracy of the prediction of bankruptcy of a company exceeds 90% (Chen and Shimerda, 1981). Altman, in his model, uses a variety of ratios to examine the seven factors mentioned above. It should be noted that some researchers (that is to say, Morris, 1998) argue that since the bankruptcy was due to unforeseeable events, therefore it can not be predicted.

More than that, it is imposed that financial ratios of a specific business *to be best interpreted as a group* (Walton et al. 2003) rather than making judgments on individual ratios because the interpretation of one ratio may be altered by other ratios of the same business.

We may group the **most popular financial ratios** used very often by researchers, into following four groups:

1. *Profitability ratio* represented by return on assets (Beaver, 1966; Deakin, 1972; Libby, 1975; Ohlson, 1980; Lennox, 1999; Abdullah, 2008; Zulkarnain, 2001; Lykke et. al 2004; Siminica, 2005) ;
2. *Leverage ratio* represented by total liabilities to total assets (Beaver, 1966; Deakin, 1972; Ohlson, 1980; Zmijewski, 1984 ; Zavgren et Dugan, 1989; Mohamed 2001; Anghel, 2002; Lykke et. al . 2004; Abdullah; 2008) ;
3. *Cash flow ratio*, represented by cash to total assets or cash to current liabilities (Lennox 1999; Zavgren et Dugan, 1989; Low et al. (2001) and Zulkarnain, (2001; Ivoniciu ,1998; Bailesteau 1998, Anghel, 2002);
4. *Size activity* (Ohlson, 1980; Lennox, 1999; Shumway, 2001; Lykke et. al 2004).

Regarding the evolution of company performance systems, the following stages in evolving the performance concept can be identified:

- a)The period 1960-1970 is marked by the representation of the company performance through indicators which define the firm dimension such as: turnover and total assets ;
- b)The period 1970 -1980 is defined by profitability indicators such as: net profit, profit per share, PER ;
- c)The period 1980-1990 highlights the problem of liquidity liberated from economic life, expressed by cash flow indicators;
- d)The period 1990-2001 orients attention towards value-creating concepts expressed through: cash flow return on investment, economic value added, market value added.
- e)The period 2001-present, performance is defined in terms of *value creation*, which is subordinated to the purpose of sustainable development.

For these reasons, despite the increasing roles of the non-financial factors, the financial performances of an economic entity is an important barometer of its own health. The diagnosis related to the health of the financial state should highlight aspects related to the following investigated domains:

1. *Highlighting the ability of the company to pay current debts at short and long term, within a **diagnostic of liquidity and financial solvency**;*
2. *Highlighting the degree of indebtedness, within a **diagnostic of gearing**;*
3. *Highlighting the turnover ratios, within a **diagnostic of management activity**;*
4. *Highlighting the state of commercial profitability and return, within a **diagnostic of profitability**;*
5. *Highlighting cash-flows generated and used in activity, within a **diagnostic of cash-flow**;*
6. *Highlighting the main economical and financial risks affecting the entity, within a **diagnostic of risks**;*
7. *Highlighting the performance of the market within a **diagnostic of stock market indicators**.*

3.2. Diagnostic of liquidity and solvency

The first component of the diagnostic analysis of a company targets the continuous monitoring of the financial stability by ensuring continuous ability of payment of the company, both on short and on long term.

In this respect, an important role in financial state of a company is held by the liquidity and financial solvency indicators.

Generally, liquidity and financial solvency is the entity's ability to meet payments due. Liquidity concerns the short-term ability to pay, while solvency concerns the long-term coordinates of this pay capacity.

3.2.1 Diagnostic of liquidity

In a brief statement, financial liquidity of assets is the ability of the active, current elements to transform into liquidities to meet immediately due debts.

According to International Financial Reporting Standards (2017) "Liquidity refers to the ability of cash to meet in the near future the financial obligations after covering the financial obligations for this period. "

In our opinion, the main overall liquidity indicators are:

- 1. Current liquidity ratio;**
- 2. Quick ratio;**
- 3. Cash ratio;**
- 4. Net working capital;**
- 5. Net working capital ratio.**

Table 12. Calculation and significance of solvency indicators

No.	Indicators	Formula	Explanations
1.	Current Liquidity Ratio	(Current assets/ Current liabilities)*100	It is the ability of current assets to meet the current liabilities of the company.
2.	Quick Ratio or Acid Ratio	(Cash + Marketable securities + Accounts receivable)/ Current liabilities)*100	It highlights the ability of current assets with high and very high liquidity to meet the current liabilities of the company.
3.	Cash Ratio	Cash and equivalents of cash /Current liabilities)*100	It measures the extent to which cash covers the immediately due debts immediately due current liabilities.
4.	Net working capital (NWK)	Current assets minus Current liabilities	It represents the current assets permanently remaining to the entity namely those current assets that remain after the payment of current obligations
5.	Working capital ratio (WKR) or Working capital to total asset	Working capital/Total assets	Reflects the share of working capital in total assets.

The diagnosis of the state of liquidity concerns identifying strengths and weaknesses in the ability of assets to cover short-term payment obligations and the evaluation (quantification) of the assets as shown in the table below:

Table 13. Grid of liquidity diagnostic

No.	Liquidity indicators	References	SWOT diagnostic	Points
1.	Current Liquidity Ratio	Optimum level: [150%-250%] Optimum tendency: ↑	Weak/ Strong/ Improvement/ Impairment	1-5
2.	Quick Ratio or Acid Ratio	Optimum level: [50%-100%] Optimum tendency: ↑		
3.	Cash Ratio	Optimum level: [20%-60%] Optimum tendency: ↑		
4.	Net working capital	Optimum level: > 0 Optimum tendency: ↑		
5.	Net working capital ratio (Net working capital to total asset)	Optimum level: Average of sector Optimum tendency: ↑		

Regarding working capital, an analytical qualitative and quantitative evaluation is conducted, according to the scale below:

Table 14. Grid of working capital diagnostic

No.	Indicators-Correlation	Interpretation/Causes	SWOT diagnosis	Scores
1.	NWK > 0 I_{NWK} > 100	The company has a short-term growing financial balance; a very favorable situation in terms of achieving short-term financial equilibrium.	Strong status/ Improvement	4.5 – 5
2.	WK > 0 I_{NWK} = 100	The company has a short-term financial balance which is maintained over time.	Strong status/ Maintain	4
3.	NWK > 0 I_{NWK} < 100	The company has a short-term financial balance which deteriorates over time.	Strong status/ Impairment	3 – 3.5
4.	NWK = 0	The company has a state of short-term precarious financial balance because any dysfunction affecting the realization of current assets may affect the balance of the entity. In practice, this rarely occurs.	Mean/ Maintain	3
5.	NWK < 0 I_{WK} < 100	The company has a state of short term imbalance which means that current liabilities are financing both current assets and a part of the fixed assets. This situation engenders difficulties if	Critic status/ Improvement	2.5-3

		we look through the maturities of the current debt which are fewer than the liquidity assets and leads therefore to a mismatch between the ratio of receipts and payments. In time, the situation improves and the imbalance decreases.		
6.	NWK < 0 I_{NWK} = 100	The company has a state of a short term imbalance, which however, is maintained in time.	Critic/ Maintain	2
7.	NWK < 0 I_{NWK} > 100	The company has a state of short term imbalance which, in time, is more emphasized and the situation becomes critical.	Critic / Impairment	1-1.5

Based on the investigation on the state of liquidity, the synthesis of the diagnostic of liquidity is established according to the table below:

Table 15. DIAGNOSTIC OF LIQUIDITY

Indicators	Observations	SWOT diagnosis	Points	Importance	Scores	Measures
1.Current Liquidity Ratio	n1	p1	n1xp1	...
2.Quick Ratio or Acid Ratio	n2	p2	n2xp2	...
3.Cash Ratio	n3	p3	n3xp3	...
4. Net working capital	n4	p4	n4xp4	...
5. Net working capital ratio	n5	p5	n5xp5	...
Diagnostic of liquidity	WEAK –STRONG			100 %	$\bar{N} = \sum_{i=1}^n nixpi$...

The weights of importance given to the five indicators that reflect liquidity are awarded according to the frequency level that these indicators are demanded by various users of financial information. Current liquidity ratio and working capital are among the most used indicators that reflect a company's liquidity and therefore should be given a share of higher importance.

In order to apply the "therapy" to improve financial liquidity, it is necessary to act on the factors determining it. In our opinion the financial liquidity status can be improved through appropriate measures, acting at least in the following areas:

- ❖ increase the cost of operating activities;

- accelerating the turnover of the claims;
- obtain a higher turnover rate for the claims than for the liabilities;
- negotiate longer terms with suppliers;
- accelerating the turnover rate of the stocks by identifying the slow moving stocks and value them as soon as possible;
- achieving positive cash flows from operations, investing and financing;
- emphasizing the degree of participation of the assets to the economic cycle;
- increase the share of cash and cash equivalents in total current assets.

Example

The manager of Anaconda Company from Electronics (Consumer & Office) area is interested in finding the standing of capacity of the company to pay its current debts. The following data provided by financial statements are given:

Table 16. Balance Sheet at December 31 year N, Anaconda Company (\$)

Elements	N	N-1
<i>Current assets</i>		
Cash and cash equivalents	230	120
Accounts receivable	700	1,200
Inventory (Stocks)	900	1,950
Total current assets	1,830	3,270
<i>Non-current assets</i>		
Property, plant and equipment	2,280	800
Long-term financing receivables and other assets	2,500	2,500
Total non-current assets	4,780	3,300
Total assets	6,610	6,570
<i>Current liabilities</i>		
Accounts payable	150	1,890
Taxes on earnings	400	1,000
Interest payable	230	110
Total current liabilities	780	3,000
<i>Non-current liabilities</i>		
Long-term debt	1,100	940
Total non-current liabilities	1,100	940
Shareholder equity		
Common stock	1,500	1,250
Retained earnings	3,230	1,380
Total shareholder's equity	4,730	2,630
Total liabilities	1,880	3,940
Total liabilities and shareholders' equity	6,610	6,570

Table 17. Profit or Loss Account at December 31 year N, Anaconda Company (\$)

	N	N-1
Net sales	30,650	29,500
Cost of goods sold	26,000	26,200
Gross margin	4,650	3,300
Research and development		
Selling, general and administrative		
Amortization o	450	375
In process research and development charges		
Restructuring charges		
Acquisition related charges		
Other operating expenses	910	835
Earning from operation	3,290	2,090
Interest expenses	400	352
Financial investments revenues	500	480
Exchange rate losses	40	32
Earning before taxes	3,350	2,186
Income taxes	300	286
Net earning	3,050	1,900

Solution

Table 18. The values of liquidity ratios for Anaconda Company

Liquidity ratios	N	N-1	References
Current ratio	234.62% 4 points*	109.00% 1 point*	Optimum around 200%
Quick ratio	119.23% 4points*	44.00% 2 points*	Optimum around 75%
Cash ratio	29.49% 2 points*	4.00% 1 points*	Optimum around 40%
Net working capital	1,050 5points*	270 5 points*	Optimum >0
Net working capital ratio	15.89% 2 points*	4.11% 1 points*	Average of sector 19%

* The points are awarded according to the value of the realized values compared to the established references (over or under the reference levels).

The current ratio is evolving favorably over the analyzed period, increasing from 109 % to 234.62%, meaning a doubling of its value. According with the matrix of state and tendency, we found an average state/ Sudden improvement (4 points).

Quick ratio increases rapidly from 44 % to 119.23 %, reflecting also an

average state/ Sudden improvement (4 points).

Cash ratio reflects a very low levels of 4% increasing to 29.49 %, under the optimum of 40%, reflected by the practice of business . Thus the general state of cash ratio is weak, with Sudden improvement, corresponding 3.5 points.

Net working capital is positive over the whole period, increasing around of 3,8 times in year N comparing with the previous one. State forte/ Sudden improvement, meaning 5 points.

Even Net working capital is positive, its value is not enough to serve the entire activity. The percent of Net working capital in total assets is low, even the value is strengthening sharply from one period to the next. State weak/ Sudden improvement=3.5 points.

Table 19. DIAGNOSTIC OF LIQUIDITY

Indicators	Observations	SWOT diagnosis	Points
1.Current Liquidity Ratio	Good state	Average state/ Sudden improvement	4
2.Quick Ratio or Acid Ratio	Good state	Average state/ Sudden improvement	4
3.Cash Ratio	Satisfying state	Weak State/ Sudden improvement	3.5
4. Net working capital	Streinght state	State forte/ Sudden improvement	5
5. Net working capital ratio	Satisfying state	State weak/ Sudden improvement	3.5
<i>Diagnostic of liquidity</i>	GOOD POINT Good state		4*

* The average of indicators is used, considering the equal importance between them.

The general diagnostic of liquidity of Anaconda Company reflect a strength point, with a good ability of different elements of current assets to cover the current liabilities. The company faces some problems relied to the capacity to pay current debts from cash and the insufficiency of net working capital compared to the level of activity.

3.2.2. Diagnostic of solvency

In a general acceptance, financial solvency is the ability of assets to meet the liabilities of any chargeability. The risk of insolvency should be considered in conjunction with the risk of bankruptcy or insolvency of the entity.

In compliance with IFRS 'financial solvency refers to liquidities for a longer period of time when financial commitments are due to be honored. "(IFRS 2011, Framework for the Preparation and Presentation of Financial Statements, par 16).

In our opinion, the main solvency ratios are:

- 1. Solvency ratio;**
- 2. Solvency on long term ratio;**
- 3. Capacity to cover debts;**
- 4. The debt service coverage;**
- 5. Times interest Earning;**
- 6. Cash coverage ratio.**

Table 20. Calculation and significance of solvency indicators

No.	Indicators	Formula	Explanations
1.	Solvency ratio	(Total assets/Total liabilities)*100	Shows how the entity's assets can cover total debts.
2.	Solvency ratio on long term	((Total assets-Current debts)/ Financial debts on long term)*100	Represents the entity's ability to repay long-term debt contracted to banking and financial institutions from the remaining assets of the entity after paying the current liabilities.
3.	Capacity to cover debts	Cash and equivalents of cash/Total debts	Represents the extent to which total debt can be covered at the expense of their own net auto financing sources.
4.	Capacity to cover the debts services	Cash and equivalents of cash / Principal plus interest from long term loans	Shows the extent to which the company covers the refund rate for the long term (main) credit, plus its interest from its own sources of cash flow.
5.	Times interest earning	Earnings before interest and taxes/ Interest expenses	Expresses the entity's ability to cover interests from the result.
6.	Cash coverage ratio	Cash and equivalents / Interest expenses	Represents another form of expressing the coverage extent of the interest.

Table 21. Grid of solvency diagnostic

No.	Solvency indicators	References	SWOT diagnosis	Points
1.	Solvency ratio	Optimum level: [150%-300 %] Optimum tendencies: ↑	Weak/ Strong/ Improvement / Impairment	1-5
2.	Solvency on long term ratio	Optimum level: [80%-180%] Optimum tendencies: ↑		
3.	Capacity to cover debts	Optimum level: over 0.25 times Optimum tendencies: ↑		
4.	Capacity to cover the debts services	Optimum level: over 2 times Optimum tendencies: ↑		
5.	Times interest earning	Optimum level: over 2.4 times Optimum tendencies: ↑		
6.	Cash coverage ratio	Optimum level: over 2.6 times Optimum tendencies: ↑		

Based on the investigated elements regarding the state of solvency, the synthesis of the diagnostic of solvency is established according to the table below:

Table 22 . DIAGNOSTIC OF SOLVENCY

Indicators	Observations	SWOT diagnosis	Points	Importance	Scores	Measures
1. Solvency ratio	n1	p1	n1xp1	...
2.Solvency on long term ratio	n2	p2	n2xp2	...
3.Capacity to cover debts	n3	p3	n3xp3	...
4.Capacity to cover the debts services	n4	p4	n4xp4	...
5.Times interest earning	n5	p5	n5xp5	...
6.Cash coverage ratio	n6	p6	n6xp6	
Diagnostic of solvency	WEAK-STRONG			100 %	$\bar{N} = \sum_{i=1}^n nixpi$...

The weights of importance given to the six indicators that reflect solvency are awarded according to the frequency with which various users of financial information use these indicators. Overall, solvency ratio, debt repayment capacity and interest coverage ratio from the output are among the most used indicators that reflect the solvency of a company and therefore should be given special attention.

In order to apply the "therapy" for improving the state of solvency, it is

necessary to know the factors that influence this state. These factors are much more varied and complex than those specified to the liquidity state and they aim the long-term horizon of the entity but even the economic and socio-political environment of the country. Among these factors, the following can be mentioned: turnover rate of fixed assets; monetary policy of creditors; economic and political stability.

Finally, it is developed the general diagnosis of the state of liquidity and solvency which are synthesized withing a score (qualitative and quantitative) for this investigated area, as shown in the table below:

Table 23. SYNTHESIS OF LIQUIDITY AND SOLVENCY DIAGNOSTIC

Indicators	Observations	SWOT diagnosis	Points	Importance	Scores	Measures
1.Liquidity	...	n1	p1	n1xp1
2.Solvency	...	n2	p2	n2xp2
Diagnostic of liquidity and solvency	WEAK-STRONG POINT			100 %	$\bar{N} = \sum_{i=1}^n nixpi$...

Example

Giving the same data of Anaconda Company, its manager is interested in determined a diagnostic of solvency.

Solution

Table 24. The values of solvency ratio for Anaconda Company

Solvency ratios	N	N-1	References
1.General solvency ratio	351.60% 4 points*	166.75% 3 points*	225%
2.Solvency on long term ratio	530.00% 5 points*	379.79% 5 points*	130%
3.Capacity to cover debts	0.12 1 point*	0.03 1 point*	0.25
4.Capacity to cover the debts services	-	-	2
5.Times interest earning	9.38 5 points*	7.21 5 points*	2.4
6. Cash coverage ratio	0.58 1 point*	0.34 1 point*	2.6

* The points are awarded according to the value of the realized values compared to the established references (over or under the optimum levels).

Solvency ratio reflects an average good state, reflecting a good capacity of total assets to cover the total liabilities in each years ($3+4=7/2=3.5\approx4$), with a high increase over the period (Doubling value). Good state/sudden improvement =4.5 points.

Solvency ratio on long term reflects very high values compared to the reference. Very good state/ Slow improvement=4.5 points.

Capacity to cover debts reflects a very low capacity to cover debts from cash, but it increase 4 times over the period. Critic state/sudden improvement=3 points.

Times interest earning reflect a very good capacity to pay interests from the earning before interest and taxes (EBIT), of 7.21 times (in year N-1) and 9.38 times (in year N). Very good state/ Slow improvement=4.5 points.

Cash coverage ratio reflect a critic capacity to cover the interest from cash and equivalents, of 0.34 (in year N-1) to 0.58 (in year N). Critic state/ Slow improvement=2.5 points.

Table 25. DIAGNOSTIC OF SOLVENCY

Indicators	Observations	SWOT diagnosis	Points
1.General solvency ratio	Very good state	Good state/sudden improvement	4.5
2.Solvency ratio on long term	Very good state	Very Good state/slow improvement	4.5
3.Capacity to cover debts	Medium	Critic state/sudden improvement	3
4.Times interest earning	Very good state	Very good state/ Slow improvement	4.5
5. Cash coverage ratio	Unsatisfactory state	Critic state/ Slow improvement	2.5
Diagnostic of solvency	GOOD POINT Good state		3.8*

* The average of indicators is used, considering the equal importance between them.

The general diagnostic of solvency for Anaconda Company reflects a strength point, with a good ability of assets to cover the company's liabilities. The main weakness regards the capacity to pay debts and interests from cash and equivalents of cash.

Table 26. SYNTHESIS OF LIQUIDITY AND SOLVENCY DIAGNOSTIC

Indicators	Observations	SWOT diagnosis	Scores
1.Liquidity	Good state	GOOD POINT	4
2.Solvency	Good state	GOOD POINT	3.8
Diagnostic of liquidity and solvency	GOOD POINT Good state		3.9*

* The average of indicators is used, considering the equal importance between them.

The Anaconda Company faces a good state of liquidity and solvency. The main weakness regards the ability to pay debts and interest from cash and equivalents of cash.

3.3. Diagnostic of gearing

An extremely important area of investigation by the company's managers and especially by creditors consist the proportion in which the company finances its activities from their own sources, comparing with the external sources.

Gearing is a measure of financial leverage, reflecting the degree to which a firm's activities are funded by owner's funds versus any other creditors' funds (banks, suppliers, group, shareholders, personnel, state etc).

In our opinion, the main gearing indicators are:

- 1. *Financial autonomy ratio;***
- 2. *Debt ratio;***
- 3. *Stability ratio;***
- 4. *Long-term autonomy ratio;***
- 5. *Financial debts ratio;***
- 6. *Long-term financial debts ratio;***
- 7. *Debt to Equity Ratio.***

The indebtedness of the entity is highlighted by gearing ratios, as shown in the table below:

Table 27. Calculation and significance of gearing ratios

No.	Indicators	Formula	Explanations
I. Ratios of the general structure of liabilities and equity			
1.1.	Financial autonomy ratio	(Shareholder's equity/ Total sources)*100	Highlights the extent to which the entity financed its activity from its own sources. Total sources reflect own and raised sources.
1.2.	Debt ratio	(Total debts/ Total sources)*100	Highlights the extent to which the entity funds its operations from loans.
II. Ratios of combined structure of liabilities and equity			
2.1.	Stability ratio	(Long term sources/Total sources)*100	Highlights the investment capacity of the entity
2.2.	Long-term autonomy ratio	(Total equity/ Long term sources) *100	Outlines the financing of the entity on behalf of long-term resources. Long term sources include equity and long term liabilities.
2.3.	Financial debts ratio	(Financial debts/ Equity)*100	Highlights the indebtedness of the entity in financial and banking sources:
2.4.	Long-term financial debts ratio	(Long-term financial debts/ Shareholder's equity)*100	Highlights the indebtedness of the entity in financial and banking sources on the long-term.
2.5.	Debt to Equity Ratio	(Total debts/ Shareholder's equity)*100	Shows how economic resources of the company are purchased from foreign capital.

Table 28. Grid of gearing diagnostic

Nr. crt.	Gearing ratios	References	SWOT Diagnosis	Points
I Ratios of general structure of liabilities and equity				
1..1	Financial autonomy ratio	Optimum level: [30%-100%] Optimum tendency: ↑		
1.2.	Debt ratio	Optimum level: [0%-70%] Optimum tendency: ↓		
II Ratios of combined structure of liabilities and equity				
2.1.	Stability ratio	Optimum level: [60%-100%] Optimum tendency: ↑	Weak/ Forte/ Impairment/ Improvement	1-5
2.2.	Long-term autonomy ratio	Optimum level: [50%-100%] Optimum tendency: ↑		
2.3.	Financial debts ratio	Optimum level: [0%-50%] Optimum tendency: ↓		
2.4.	Long-term financial debts ratio	Optimum level: [0%-40%] Optimum tendency: ↓		
2.5.	Debt to Equity Ratio	Optimum level: <200% Optimum tendency: ↓		

Table 29. DIAGNOSTIC OF GEARING

Indicators	Observations	SWOT diagnosis	Points	Importance	Scores	Measures
1. Financial autonomy ratio	n1	p1	n1xp1	...
2. Debt ratio	n2	p2	n2xp2	...
3. Stability ratio	n3	p3	n3xp3	...
3. Long-term autonomy ratio	n4	p4	n4xp4	...
4. Financial debts ratio	n5	p5	n5xp5	...
5. Long-term financial debts ratio	n6	p6	n6xp6	...
6. Debt to Equity Ratio	n7	p7	n7xp7	...
Diagnostic of gearing	WEAK –FORTE POINT			100 %	$\bar{N} = \sum_{i=1}^n n_i x_i p_i$...

Example

Giving the same data of Anaconda Company, its manager is interested in determined a diagnostic of gearing.

Solution

Table 30. The values of gearing ratio for Anaconda Company

Solvency ratios	N	N-1	References
1. Financial autonomy ratio	71.56% 4 points*	40.03% 3 points*	min.30% (3 points), max.100% (5 points)
2. Debt ratio	28.44% 4 points*	59.97% 3 points*	min.0 (5 points) max 70% (3 points)
3. Stability ratio	88.20% 4 points*	54.34% 2 points*	min.60% (3 points) max.100% (5 points)
4. Long- term autonomy ratio	81.13% 4 points*	73.67% 4 points*	min.50% (3 points) max.100% (5 points)
5. Financial debts ratio	23.26% 4 points*	35.74% 3 points*	min.0% (5 points) max. 50% (3 points)
6. Long-term financial debts ratio	23.26% 4 points*	35.74% 3 points*	min.0% (5 points) max. 40% (3 points)
7. Debt to Equity Ratio	39.75% 5 points*	149.81% 4 points*	min.0% (5 points) max 200% (3 points)

* The points are awarded according to the value of the realized values compared to the established references (over or under the optimum levels).

Financial autonomy ratio takes values of 40.03% in the year N-1 and increases at 71.56 % in the current year N, over the minimum acceptable (of 30%). The general state is good ((3+4)/2=3.5≈4 points) and face improvements from one year to the next. Good state /slow improvement= 4 points.

Debt ratio decreases from 59.97% (year N-1) to 28.44% (year N), taking good values over the whole period, with low risk. Good state ((3+4)/2=3.5≈4 points) /sudden improvements (the value are halved)= 4.5 points.

Stability ratio faces a significantly improvement in current year compared with the previous one (increase from 54.34% to 88.25). Medium state ((2+4)/2=3 points) /slow improvements = 3.5 points.

Long- term autonomy ratio reflects a good capacity of financing activity from own capital, related to the whole capital employed. The values of ratio range between 73.67% to 81.13 %. Good state ((4+4)/2≈4 points) /slow improvements = 4 points.

Financial debts ratio decreases from 35.74 % (year N-1) to 23.26% (year N), taking good values over the entired period, providing a low financial risk. Good state ((3+4)/2=3.5≈4 points) /slow improvements = 4 points.

Long-term financial debts ratio takes the same values with financial debts ratio, because Anaconda company doesn't have short-term borrowings.

Debt to Equity Ratio takes very good values over the whole period, facing a very strong improvement from 149,81% to 39.75%. The explanations could consist in reducing the value of liabilities (at half compared with the previous year) and increasing the shareholders' equity with 80%. Forte state ((4+5)/2=4.5≈5 points) /sudden improvements = 5 points.

Table 31. DIAGNOSTIC OF GEARING

Indicators	Observations	SWOT diagnosis	Points
1. Financial autonomy ratio	Good state	Good state/slow improvement	4
2. Debt ratio	Very good state	Good state/sudden improvement	4.5
3. Stability ratio	Satisfyed state	Medium state/slow improvement	3.5
4. Long- term autonomyratio	Good state	Good state/slow improvement	4
5. Financial debts ratio	Good state	Good state/slow improvement	4
6. Long-term financial debts ratio	Good state	Good state/slow improvement	4
7. Debt to Equity Ratio	Forte state	Very good state/sudden improvement	5
Diagnostic of gearing	GOOD POINT Good state		4.14*

* The average of indicators is used, considering the equal importance between them.

The general diagnostic of gearing for Anaconda Company reflects a strength point regards the structure of funding sources, providing a low financial risks. The main weakness consist in the *stability ratio* which took weak value in the previous year, but it has improved in the current year, achieving a good level.

3.4. Diagnostic of management activity

The managers are primarily interested in the use of society's resources but another important category of users of this investigated aspect is represented by the investors. The future performance of the company and its ability to develop cash will depend on the use of resources committed in the society.

A rapid diagnosis of the way of managing the resources committed by the company can be founded using the minimal information provided by financial statements. Activity indicators are essentially based on the calculation of the turnover rate of the financial position elements (FP) which can be expressed as:

- ✓ As number of turnovers $K_{FP(i)} = \frac{\text{Sales}}{\text{Financial position element}(i)}$, showing the number of rotations made by an element "i" of financial position.
- ✓ As duration in days of a turnover $Dz_{FP(i)} = \frac{\text{Financial position element (i)}}{\text{Sales}} \times 365$, showing the number of days in which the element of financial position "i" transforms itself into liquidities returning to the initial liquid position.

In our opinion, the main following activity indicators need to be in the financial analyst's attention:

- 1. Assets turnover;**
- 2. Fixed assets turnover;**
- 3. Inventory turnover;**
- 4. Receivables turnover;**
- 5. Trade receivables turnover;**
- 6. Total debts turnover;**
- 7. Trade payables turnover;**
- 8. Shareholder's equity turnover;**
- 9. Net working capital turnover;**

Specifically, the diagnosis of the activity indicators is based on the information provided by the tables (no. 32 and 33) from below:

Table 32. Grid of activity turnover diagnostic

No.	Activity ratios	References*	SWOT Diagnosis	Points
1.	Assets turnover	Average on the emerging market: 0.8 rotations, Optimum trend: \uparrow	Weak/ Strong/ Impairment/ Improvement	1-5
	Fixed assets turnover	Average on the emerging market: 10.33 rotations, Optimum trend: \uparrow		
3.	Inventory turnover	Average on the emerging market: 5 rotations, Optimum trend: \uparrow		
4.	Receivables turnover	Optimum trend: \uparrow		
5.	Trade receivables turnover	Average on the emerging market: 6 rotations, Optimum trend: \uparrow		

6.	Total debts turnover	Optimum trend: ↓		
7.	Trade payables turnover	Average on the emerging market: 0.54 rotations, Optimum trend: ↓		
7.	Shareholder's equity turnover	Average on the emerging market: 1.26 rotations, Optimum trend: ↑		
8.	Net working capital turnover	Optimum trend: ↑		
9.	Correlation between receivables/ Payable	(Account) receivables turnover > (Account) payable turnover Optimum trend: ↑		

* The specific of activity has a big importance in determining the references of activity (turnover) ratios. The benchmark levels of activity ratios are their average recorded at the level of the sector in which the entity operates. The reference levels presented in the table reflect a general average on the emerging market (see Annex 1 "Sectoral Averages Database"). Sectoral average levels may fluctuate tremendously from one sector to another, so the use of specific industry / domain references is extremely necessary. For this purpose, a useful source of data can be represented by Annex 1 "Sectoral Average Indicators Databases". From the point of view of the diagnostic process, a level of the ratios close to the average per sector ($\pm 5\%$) will be considered as an acceptable average level (3 points).

Table 33. SYNTHESIS OF MANAGEMENT ACTIVITY DIAGNOSTIC

Indicators	Observations	SWOT diagnosis	Points	Importance	Scores	Measures
1. Management of assets	n1	p1	n1xp1	...
2. Management of inventory	n2	p2	n2xp2	...
3. Management of receivables and payables	n3	p3	n3xp3	...
4. Management of shareholder's equity	n4	p4	n4xp4	...
Diagnostic of activity turnover	WEAK - STRONG POINT			100 %	$\bar{N} = \sum_{i=1}^n n_i x_i p_i$...

Example

Giving the same data of Anaconda Company, its manager is interested in determined a diagnostic of management of activity.

Solution

The specific of activity has a big importance in determining the references of turnover ratios.

Table 34. The values of turnover ratio for Anaconda Company

Turnover ratios	N	N-1	References**
1. Assets turnover	4.64 5 point*	4.49 5 points*	1.99 rot.
2. Fixed assets turnover	6.41 2 points*	8.94 3 points*	9.45 rot.
3. Inventory turnover	34.06 5 points*	15.13 4 points*	8.37 rot.
4. Receivables turnover	43.79	24.58	-
5. Trade receivables turnover	43.79 5 points*	24.58 5 points*	5.12 rot.
6. Total debt turnover	16.30	7.49	-
7. Trade payables turnover	204.33 5 points*	15.61 5 points*	6.07 rot
8. Shareholder's equity turnover	6.48 5 points*	11.22 5 points*	3.85 rot
9. Networking capital turnover	29.19 5 points*	109.26 5 points*	10.32 rot.

** the specific reference registered for Electronics (Consumer & Office) domain in which Anaconda Company activates.

*The points are awarded according to the value of the realized values compared to the average of sector (over or under the average levels).

Assets turnover of Anaconda Company registers very good values range around 4.5-4.6 times, above the average of the companies which activate in Electronic sector (which is about 2 rotations). Forte state/ maintain= 4 points.

Fixed assets turnover registers values of 8.94 rotations (year N-1) with a decreases to 6.41 rotations (year N). The values are below the average of the sector (9.45 rotations). Medium state $((3+2)/2=2.5 \approx 3$ points/Slow impairment= 2.5 points.

→ general management of assets: $(4+2.5)/2=3.25$ points

Inventory turnover register very good values of 13.13 and 34.06 rotations, compared to the sector average. Forte state $((4+5)/2=4.5 \approx 5$ points/Sudden improvement= 5 points.

Receivables turnover and trade receivable turnover register very good values compared the sector average. Forte state/ slow improvement=4.5 points

Correlation between receivables and payable turnover

Receivables turnover are superior to debt turnover over the whole period. The coefficient of Receivables turnover/ Total debt turnover reflects a decreases from 3.42 (24.58/7.49) (year N-1) to 2.6 (43.79/16.3) (year N) meaning a slow impairment of it. Forte state/ slow impairment = 3.5 points.

As for the correlation between trade receivables and trade payable, we may observe a different correlation. Thus in the year N-1, the correlation is favorable, meaning that the collection rate of trade receivable exceed the pay rate of trade payable (state good=4 points). In the next year, the rhythm of collection of trade receivable increase at 43.79 rotations but the rhythm of paying trade debts increases much more at 204.33 rotations, conduced to a unfavorable correlation (state critic=1 points). The overall state is medium ((4+1)/2=2.5≈3 points) with a sudden impairment = 2 points.

Shareholder's equity turnover registers very good values compared with the average of sector, but decreasing. Forte state/slow impairment= 3.5 points.

In table 35, the diagnostic of activity management show a satisfied state (3.62 points). The main weakness regards the management of receivables and payables, especially at the general level. Anaconda Company has some problems regarding the much more accentuated rhythm of debt payments compared with the rhythm in which it collects the receivable. This precarious management of debts may create serious problem of effective liquidity (cash). Actually, we identified such type of problem before, when we analyzed the liquidity ratios. As measure, we propose a negotiating of payment terms at a later date.

Table 35. SYNTHESIS OF MANAGEMENT ACTIVITY DIAGNOSTIC

Indicators	Observations	SWOT diagnosis	Points
1. Management of total assets	Medium state to satysfyed state	STRENGHT POINT	3.25
Assets turnover	Good state	Forte state/ maintain	4
Fixed assets turnover	Unsatisfyed state	Medium state/ Slow impairment	2.5
2. Management of inventory	Forte state	STRENGHT POINT	5
Inventory turnover	Forte state	Forte state /Sudden improvement	5
3. Management of receivables and payables	Medium-accepted	UNCERTAIN POINT	2.75
Receivables turnover and trade receivable turnover	Satisfyed state	Forte state/ slow impairment	3.5
Correlation between receivables/ Payable	Weak state	Medium state/ Sudden improvement	2
4. Management of shareholders's equity	Satisfyed state	STRENGHT POINT	3.5
Shareholders's turnover	Satisfyed state	Forte state/slow impairment	3.5
Diagnostic of activity turnover	GOOD POINT Satisfyed state		3.62*

* The average of indicators is used, considering the equal importance between them.

3.5. Diagnostic of profitability

In order to ensure continuity, any economic activity must be conducted under profitable conditions, meaning that income must exceed the expenses incurred in the economic activity and therefore a profit must be obtained.

The state of profitability may be reflected in two way: firstly, as commercial profitability (by using the profit margin ratios); secondly, by state of return (through the return ratios).

The data sources for the diagnosis of the profitability state are consist in Profit and Loss Account but also the other components of the financial statements may complement the informational value concerning the profitability status of the entity.

3.5.1. Diagnostic of profit margin ratios

A first form in expressing the profitability status of a company targets the commercial dimension of the business as profit margin ratios. These are also referred to as commercial profitability ratios because they characterize the efficiency of commercial activity and the competitiveness of the company's products, reflected mainly in pricing policy.

In our opinion, the main profit margin ratios useful for determining the profitability status, are the following:

- 1. Gross profit margin ratio;**
- 2. Net profit margin ratio;**
- 3. Operating profit margin ratio.**

The computational formulas and their significance are illustrated in table below:

Table 36. Calculation and significance of the profit margin ratios

No.	Indicators	Formula/Symbol	Explanations
1.	Gross profit margin ratio	(Gross profit or EBIT(EBITDA)/Total sales)*100	Reflects the overall effectiveness of the entity's activity, its ability to develop a profit from sales.
2.	Net profit margin ratio	(Profit after tax or EBIT(EBITDA) after taxes /Total sales)*100	Reflects the value of net profit generated by 100 \$ sales, thus expressing revenue contribution to strengthening the capacity of self-financing entity.
3.	Operating profit margin ratio	(Operating profit/Total sales)*100	Reflects the entity's capacity of releasing profit from operating activities.

Table 37. Diagnostic grid of the profit margin ratios

N o.	Profit margin ratios	References*	SWOT Diagnostic	Points
1.	Gross profit margin	Average in emerging markets:: 13.43% Optimum trend : ↑	Weak/ Strong/ Impairment/ Improvement	1-5
2.	Net profit margin	Average in emerging markets:: 8.04 % Optimum trend : ↑		
3.	Operating profit margin	Average in emerging markets:: 8.22% Optimum trend : ↑		

* The specific of activity has a big importance in determining the references of profitability ratios. The benchmark levels of profitability ratios are their average recorded at the level of the sector in which the entity operates. The reference levels presented in the table reflect a general average on the emerging market (see Annex 1 "Sectoral Averages Indicators Database").

Sectoral average levels may fluctuate tremendously from one sector to another, so the use of specific industry / domain references is extremely necessary. For this purpose, a useful source of data can be represented by Annex 1 "Sectoral Average Databases". From the point of view of the diagnostic process, a level of the ratios close to the average per sector ($\pm 5\%$) are considered as an acceptable average level (3 points).

Table 38. Synthesis of profit margin ratios diagnostic

Indicators	Observations	SWOT Diagnosis	Points	Importance	Scores	Measure
1.Gross profit margin ratio	n1	p1	n1xp1	...
2.Net profit margin ratio	n2	p2	n2xp2	...
3.Operating profit margin ratio	n3	p3	n3xp3	...
Diagnostic of profit margin ratios	WEAK –STRONG POINT			100 %	$\bar{N} = \sum_{i=1}^n N_i x P_i$...

Example

Giving the same data of Anaconda Company, the manager is interested to find a diagnosis of profitability and return state.

Solution

State of profitability highly depend on the specific of the sector in which a company activates. The calculation of profitability ratio is designed as in the table 39, from below:

Table 39. The values of profit margin ratio for Anaconda Company

Profit margin ratios	N	N-1	References**
Gross profit margin ratio (gross profit / sales)*100	15.17% 5 points*	11.19% 5 points*	5.43%
Net profit margin ratio (net profit / sales)*100	9.95% 5 points*	6.44% 5 points*	1.63%
Operating profit margin ratio(operating profit / sales)*100	10.73% 5 points*	7.08% 5 points*	1.30%

** the specific reference registered for Electronics (Consumer & Office) domain in which Anaconda Company activates.

*The points are awarded according to the value of the realized values compared to the average of sector (over or under the average levels).

Gross profit margin ratios registers double values ranges between 11-15%, comparing with the average of sector of 5.43 %. Forte state/slow improvement=4.5 points.

Net profit margin ratios registers values of 4 to 6 times higher than the average of sector. These values ranges between 6 to 10%, comparing with the average of sector of 1.63 %. Forte state/slow improvement=4.5 points.

Operating profit margin ratio also registers very good values comparing with the competitors, range between 7 to 10 %. %. Forte state/slow improvement=4.5 points.

Table 40. Synthesis of profit margin ratios diagnostic

Indicators	Observations	SWOT Diagnosis	Points
1.Gross profit margin ratio	Very good state	Forte state/slow improvement	4.5
2.Net profit margin ratio	Very good state	Forte state/slow improvement	4.5
3.Operating profit margin ratio	Very good state	Forte state/slow improvement	4.5
Diagnostic of profit margin ratios	STRENGHT POINT Very good state		4.5 *

* The average of indicators is used, considering the equal importance between them.

Concluding, Anaconda Company has a very good state of commercial profitability for its activity, related to the companies from the Electronics (Consumer & Office) sector, which operate in emerging economies.

3.5.2. Diagnostic of return ratios

The next level of assessment the state of profitability of an economic activity is given by the state of return. Unlike the state of commercial profitability, the state of return is a more analytical assessment of the performance of a business. Not every activity that generate state of profitability is by default an activity characterized by return. An economic activity can realized profit but the committed efforts (the inputs) engaged to achieve that results can be higher than

the effects (outputs), thus reflecting a low return state (a low level of yield).

The differences between the concepts of commercial profitability and return can be expressed as follows:

- The commercial profitability status is a necessary condition for the existence of the return status in an economic activity; therefore, it can be accepted the fact that commercial profitability is a condition for getting an yield economy activity;
- Given the above, the commercial profitability ratios are situated behind the return, being included in the general ratio system expressing the profitability of a business;
- The return ratios express the efficiency of the business (the yield) by reporting the effects to the efforts involved (effects/efforts), while the commercial profitability ratios are expressed in terms of effects/effects.

Return ratios should highlight the efficiency of using the investments in the entity. This investments can be reflected in different ways as follows:

- On the one hand, in the effectiveness of long-term investments made by shareholders and any creditors, represented by equity and / or employed capital, in which case the **financial return** of capital is determined;
- On the other hand, in the effectiveness of the investment represented by the resources controlled by the entity, in which case the **economic return state** is calculated.

3.5.2.1 Diagnostic of financial return

Financial return reflects the degree of return on capital invested in activity by investors and creditors and may be presented under the following forms:

- 1. *Return on Common Equity (ROE);***
- 2. *Return on capital employed (ROCE);***
- 3. *Return on invested capital (ROIC).***

The formula and explanations of the financial return ratios are presented in the table below:

Table 41. Calculation and significance of financial return ratios

No.	Indicators	Formula	Explanations
1.	Return on Common Equity – ROE	(Net profit/Shareholder's equity) *100	It reflects the efficiency (yield) of using the shareholders' capital.
2.	Return on capital employed- ROCE	(EBIT/Capital employed*) *100	It reflects the efficiency (yield) of using the employed capital.
3.	Return on invested capital-ROIC	(EBIT/(Shareholders'equity +liabilities-cash))	It reflects the efficiency (yield) of using the capital which is invested in the company.

* Capital employed= Shareholders' equity +Debt liabilities
Or it can be simplified as Total Assets – Current Liabilities.

Developing the financial return under the multiplied DuPont model is presented as follow:

$$\text{ROE} = \frac{\text{Net profit}}{\text{Shareholder's equity}} = \frac{\text{Net profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Shareholder's equity}}$$

= Net profit margin * Total assets turnover * Leverage

From the formula for developing the financial return, one may conclude that an increase in net profit margin, in the turnover rate of the total assets, and as well as an increase in asset financing from equities represents the main ways to increase financial return. As a result, the fluctuations of ROE can be explained by an analysis based on the three factors from the analysis model.

Table 42. Grid of financial return diagnostic

No.	Indicators	References*	SWOT Diagnosis	Points
1.	Return on Common Equity – ROE	Average in emerging markets:10% Optimum trend : ↑	Weak/ Strong/ Impairment/ Improvement	1-5
2.	Return on capital employed –ROCE	Optimum trend : ↑		
3.	Return on invested capital-ROIC	Average in emerging markets:3.31% Optimum trend : ↑		

* The specific of activity has a big importance in determining the references of financial return ratios. The benchmark levels of financial return ratios are their average recorded at the level of the sector in which the entity operates. The reference levels presented in the table 42 reflect a general average on the emerging market (see also the Annex 1 "Sectoral Averages Database"). Sectoral average levels may fluctuate tremendously from one sector to another, so the use of specific industry / domain references is of extremely necessary. For this purpose, a useful source of data can be represented by Annex 1 "Sectoral Average Indicators Databases".

Table 43. Diagnostic of financial return

Indicators	Observations	SWOT Diagnosis	Points	Importance	Scores	Measure
1. Return on Common Equity – ROE	n1	p1	N1xp1	...
2. Return on capital employed –ROCE	n2	p2	N2xp2	...
2. Return on investes capital –ROIC	n3	n3	n3xp3	...
Diagnostic of financial return	WEAK –STRONG			100 %	$\bar{V} = \sum_{i=1}^n NixPi$...

Regarding the degree of importance given to the financial return ratios, the experience reveals that ROE is much more widely used than the other two ratios and therefore, this indicator should be have a higher share of importance in the total score of financial return.

3.5.2.2 Diagnosis of economical return

The economical return express the efficiency of using the resources controlled by the entity in order to generate results. This economical return state is mainly expressed under the followings forms:

- 1. *Return on total assets (ROA);***
- 2. *Operating return (OR);***
- 3. *Basic Earnings Power Ratio (BEP).***

The formula and explanations for economic return ratios is shown in the table 44 from below:

Table 44. Calculation and significance of economical return

No.	Indicators	Formula	Explanations
1.	Return on total assets-ROA	(Net profit/Total assets)*100	It measures the profitability of the entire capital determined by the contribution of total assets invested in the entity in order to obtain net profit.
2.	Operating return -OR	(Operating profit/total assets)*100	It reflects the contribution of total assets to create operating profit.
3.	Basic Earnings Power Ratio-BEP	(EBIT/Total assets)*100	Highlights the contribution of total assets to obtain earnings before interests and taxes.

Return on assets can be expressed in terms of factors and conditioning causes in a multiplied DuPont model, as follow:

$$ROA = \frac{\text{Net profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total assets}} = \text{Net profit margin} * \text{Total assets turnover}$$

From the analysis of the multiplicativ model of developing ROA, one can conclude that an increase in net profit margin and in assets turnover rate represents the main way to increase the efficiency to used total assets.

The correlation between ROE and ROA is emphasized through multiplied models for developing each indicator, therefore ROE can be directly influenced by ROA as follows:

$$ROE = \frac{\text{Net profit}}{\text{Shareholder's equity}} = \frac{\text{Net profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Shareholder's equity}}$$

$$ROE = \frac{\text{Net profit}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Shareholder's equity}} = ROA * \text{Leverage}$$

The ROE and ROA correlation analysis regards the followings:

- ➊ An increase in the return on assets (ROA form) is a condition for increasing the financial return (as ROE);
- ➋ An increase in financial leverage generates an increase in shareholders' return on equity (ROE growth).

Table 45. Grid of economic return diagnostic

No	Indicators	References*	SWOT Diagnostic	Points
1.	Return on total assets-ROA	Average in emerging countries: 6.41 % Optimum trend :↑	Weak/ Strong/ Impairment/ Improvement	1-5
2	Operating return -OR	Average in emerging countries: 6.56 % Optimum trend :↑		
3.	Basic Earnings Power Ratio-BEP	Average in emerging countries: 10.72 % Optimum trend :↑		

* The specific of activity has a big importance in determining the references of economic return ratios. The benchmark levels of economic return ratios are their average recorded at the level of the sector in which the entity operates. The reference levels presented in the table 45 reflect a general average on the emerging market (see also Annex 1 "Sectoral Averages Indicators Database"). Sectoral average levels may fluctuate tremendously from one sector to another, so the use of specific industry / domain references is extremely necessary. For this purpose, a useful source of data can be represented by Annex 1 "Sectoral Average Indicators Databases".

Table 46. Diagnostic of economic return

Indicators	Observations	SWOT Diagnosis	Points	Imp.	Scores	Measures
1.Return on total assets-ROA	n1	p1	n1xp1	...
2. Operating return -OR	n2	p2	n2xp2	...
3.Basic Earnings Power Ratio-BEP	n3	p3	n3xp3	...
Diagnostic of economic return		WEAK- STRONG	100 %	$\bar{N} = \frac{n}{\sum_{i=1}^n N_i x_i p_i}$...

The weights of importance given to the three ratios of economic return can be considered equal since these rates are often cumulative used to highlight the financial return status. However, the widespread use of ROA and BEP indicators can justify assigning a higher weights to these two indicators.

In formulating the necessary measures to ameliorate the economic return status from the analysis of the multiplied model of developing ROE, one can conclude that an increase in net profit margin and in the asset turnover rate represent the main ways to increase the return on assets. An increase in the economical return status reflects an efficient management of resources controlled

by the entity, with implications for future growth in the entity's value.

Finally, the synthesis of return diagnostic is developed consisting in the two partial diagnostics of the return status, therefore resulting the final score that characterizes the return state (table 47).

Table 47. Synthesis of return diagnostic

Indicators	Observations	SWOT Diagnosis	Points	Importances	Scores	Measures
1. Diagnostic of financial return	N1	P1	N1xP1	...
2. Diagnostic of economic return	N2	P2	N2xP2	...
SYNTHESIS OF RETURN DIAGNOSIS		WEAK-STRONG POINT		100 %	$\bar{N} = \frac{\sum_{i=1}^n N_i x P_i}{\sum_{i=1}^n N_i}$...

Example

Giving the same data of Anaconda Company, its manager wants to find a diagnosis of return state.

Solution

Table 48. The values of return ratios for Anaconda Company

Return ratios	N	N-1	References**
I Financial return ratios			
Return on Common Equity - ROE	64.48% 5 points*	72.24% 5 points*	6.26%
Return on long-term capital ROCE	64.32% 5 points*	71.09% 5 points*	-
Return on invested capital-ROIC	58.78% 5 points*	39.35% 5 points*	3.31
II. Economic return ratios			
Return on total assets-ROA	46.14% 5 points*	28.92% 5 points*	3.24
Operating return -OR	10.73% 5 points*	7.08% 5 points*	1.30%
Basic Earnings Power Ratio-BEP	56.73% 5 points*	38.63% 5 points*	10.82%

** the specific reference registered for Electronics (Consumer & Office) domain in which Anaconda Company activates.

*The points are awarded according to the value of the realized values compared to the average of sector (over or under the average levels).

The values of **Return on Common Equity (ROE)** ratios register over the analyzed period, document a very high ability of shareholders' equity to generate net profit, compared with the sector average. The values of ROE decrease from 72.24% (year N-1) to 64.48% (year N). However the values of ROE are placed over 10 times over the average. Forte state/slow impairment=3.5 points.

Return on long-term capital ROCE registers high values of 64% to 71% (the reference for the sector are not known but it can be see that all the given references for return ratios register values up to 10 %; one can estimate that sector average of ROCE is anyway up to 10%). Thus, it can assign a forte state for ROCE/ slow impairment=3.5 points.

Return on invested capital-ROIC also registers a very good efficiency of using the invested capital, compared with the sector average, rising from 39.35 % (previous year) to 58.78% (current year N), giving a sector average of 3.31%. Forte state/slow improvement=4.5 points.

Return on total assets (ROA) reflect a very good levels of net profit generated from total assets. The values of ROA increase from 28.92 % to 46.14 %, being much far over the sector average of 3.24 %. Forte State/ Slow improvement= 4.5 points.

Operating return (OR) reflects also high values range between 7-10%, compared with a sector average of 1.3%. Forte State/ Slow improvement= 4.5 points.

Basic Earnings Power Ratio (BEP) reflects a very high values of generated EBIT from the total assets, being of 3-5 times over the sector average. Forte State/ Slow improvement= 4.5 points.

Table 49. Synthesis of financial return ratios diagnostic

Indicators	Observations	SWOT Diagnosis	Points
1. Return on Common Equity – ROE	Satisfyed state	Forte state/slow impairment	3.5
2. Return on capital employed –ROCE	Satisfyed state	Forte state/slow impairment	3.5
3. Return on invested capital –ROIC	Very good state	Forte state/slow improvement	4.5
Diagnostic of financial return	GOOD POINT Good state		3.83*

* The average of indicators is used, considering the equal importance between them.

The financial return ratios reflect a good state of using the capital of shareholders, capital of long-term creditors and the whole invested capital in Anaconda Company, with values much over the sector average.

Table 50. Synthesis of economic return ratios diagnostic

Indicators	Observations	SWOT Diagnosis	Points
1.Return on total assets- ROA	Very good state	Forte State/ Slow improvement	4.5
2.Operating return -OR	Very good state	Forte State/ Slow improvement	4.5
3. Basic Earnings Power Ratio-BEP	Very good state	Forte State/ Slow improvement	4.5
Diagnostic of economic return	STRENGHT POINT Very good state		4.5*

* The average of indicators is used, considering the equal importance between them.

The return of using total assets register very good state, being a strong point in the general performance of the company. The manager, as main user of the information provided by economic returns, will be very satisfied by the way in which he/she managed the resources of the company.

Table 51. Synthesis of return ratios diagnostic

Indicators	Observations	SWOT Diagnosis	Points
1.Diagnostic of financial return	Good state	GOOD POINT	3.83*
2. Diagnostic of economic return	Very good state	STRENGHT POINT	4.5
SINTHESIS OF RETURN RATIOS DIAGNOSIS	GOOD POINT Good state		4.165*

* The average of indicators is used, considering the equal importance between them.

The general return of activity face a good state, being a good point in the general activity of the Anaconda Company (Table 51). The economic return registers higher values than financial return, reflecting a higher return registered from the company compared with the return of the investors (creditors).

Table 52. Synthesis of profitability diagnostic

Indicators	Obser-vations	SWOT Diagnosis	Points
1.Diagnostic of profit margin ratios	Very good state	STRENGHT POINT	4.5
2. Diagnostic of return ratios	Good state	GOOD POINT	4.165
DIAGNOSIS OF PROFITABILITY		GOOD POINT Very good state	4.33*

* The average of indicators is used, considering the equal importance between them.

The overall state of profitability reflects a good point in the company's activity (table 52), thus performances provided by Profit or Loss Account reflects a very good state.

Users will have much greater confidence in these results if they will also analyze the capacity of these profits to generate cash-flows (see the folowing chapter).

3.6. Diagnostic of cash-flow

According to IAS 7 “Statement of Cash Flow”, the statement of cash flow analyses changes in cash and cash equivalents during a period. Cash and cash equivalents reffer to the company's assets that are cash or can be converted into cash immediately. These include bank accounts, marketable securities, commercial paper, treasury bills and short-term government bonds with a maturity date of three months or less. Marketable securities and money market holdings are considered cash equivalents because they are liquid and not subject to material fluctuations in value. According to IFRS, Cash Flow Statement should consist one of the components of the financial statement which are required to report by the companies.

The statement of cash flows is useful both for management needs and external users (investors, creditors etc.) as follows:

- Management uses cash flow statement to determine the liquidity of the entity, for assessing the dividend policy, investment policy and therefore the finance policy.
- For *external users* (particularly investors and creditors) the document is useful for determining the entity's ability to manage cash flows in the future, to generate liquidity, to pay off debt, to pay dividends and interest etc.

For any users, this document explains the differences between net income reflected through Profit and Loss account and net cash flows generated by operating activities. In addition it presents the effects of monetary and non-monetary investment and financing activities during a financial year.

Examining Cash Flow Statement is useful in order to achieve the following **objectives:**

- establishing the ability of an entity to generate cash and cash equivalents for the three categories of activities: operating, investing and financing;
- it is given the opportunity to develop models to assess and compare the present value of future cash flows of different entities;
- determining the activities which have generated cash surplus or cash deficit and explain its causes ;
- the examination of the current cash flows from the operating activities in order to determine if they are positive and to determine the difference between the operating result and the net flows from operations;
- the comparison between the current cash flows from the operating activities and the dividend payments from the financing activities section in order to determine whether these significant cash outflows are covered and don't represent an effort to the entity;
- the examination of the investment activity in order to conclude whether or not the company expands its operations and which departments should be expended or contracted;
- the comparison between the net cash flow and the net profit reflected through the Profit and Loss Account in order to highlight the ability of the net profit to

generate cash; a high percentage of the ratio of net cash flow / net income reflects a high degree of confidence offered to the company's management in performances calculated through the Profit or Loss Account; in this context, the reports emphasize the credibility and the confidence in performance reflected through Profit and Loss Account;

- ✚ the increase in the degree of comparability of reporting the operation results between different entities, because it eliminates the effects of using different accounting treatments for the same transactions and events.

To respond the aforementioned objectives, the main useful cash flows ratios are the followings:

- 1. Accrual operating ratio;**
- 2. Accrual ratio;**
- 3. Capital Expenditure Coverage ratio;**
- 4. Free cash flow ratio.**

Calculation and the significance of the cash flows ratios are presented in the table below:

Table 53. Calculation and the significance of the cash flows ratios

No.	Cash flow indicators	Formula	Explanations
1.	Accrual operating ratio	(Operating cash-flow/ operating profit) * 100	It reflects the capacity of generating cash from operating profit.
2.	Accrual ratio	(Total cash flow/ Net profit) *100	It reflects the capacity of generating cash from net profit.
3.	Capital Expenditure Coverage ratio	(Operating cash-flow/ capital expenditure) * 100	It shows the ability of operating cash-flow to cover the capital expenditure, without resorting to loans.
4.	Free cash flow ratio	(Free Cash Flow*/Operating Cash Flow Ratio)*100	It measures the relationship between free cash flow (FCF) and operating cash flow (OCF).

* Free cash flow= Operating cash flow – Capital expenditures

Capital expenditures= Increase in fixed assets

The development of a diagnostic concerning the state and evolution of cash flows of the entity is based on the information from the table 54.

Table 54. Grid of cash-flow diagnostic

No.	Cash flows indicators	References	SWOT diagnosis	Points
1.	Accrual operating ratio	The ratios are desirable to be over 100% and the favorable trend is growing.		
2	Accrual ratio		Weak/ Strong/ Impairment/ Improvement	
3.	Capital Expenditure Coverage ratio	Investors are attracted to companies that produce plenty of operating cash flow, plenty of free cash flow because it signals a company's ability to pay dividends, pay debts, buy back stock and eases the growth of business.		
4.	Free cash flow ratio			1-5

Evidence-based analysis of the company can be developed in a final diagnosis of cash flows including the strengths and weaknesses identified at this level, as follows:

Table 55. Diagnostic of cash-flow

Indicators	Observations	SWOT Diagnosis	Points	Importance	Scores	Measures
1.Accrual operating ratio	n1	p1	n1xp1	...
2.Accrual ratio	n2	p2	n2xp2	...
3.Capital Expenditure Coverage ratio	n3	p3	n3xp3	...
4.Free cash flow ratio	n4	p4	n4xp4	...
Diagnostic of cash-flow	WEAK-STRONG POINT			100 %	$N = \sum_{i=1}^n nixpi$	

Example

The manager of Anaconda Company is interested to find a diagnostic of cash-flow of activity, giving the following data:

Table 56. Cash-flow statement, 31 December N, Anaconda Company(\$)

Cash flow from operating activities	
Income	3,350
Adjustments for:	
plus Depreciation and amortization	450
plus Exchange rate losses	40
minus Financial investments revenues	500
plus Interest expenses	400
<i>Operating profit before change in net working capital</i>	3,740
minus Change in account receivables	(500)
minus Change in inventory	(1,050)
plus Change in trade payable	(1,740)
Cash-flow generated from operations	3,550
minus Interests paid	(270)
minus Taxes paid	(900)
Net cash-flow from operating activities	2,380
Cash flow from investing activities	
Purchased of fixed assets	3200
Proceeds from sale of equipment	1720
Net cash used in investing activities	(1,480)
Cash flow from financing activities	
Proceeds from issuance of common stocks	250
Proceeds from issuance of long-term debt	250
Paid the leasing debts	(90)
Dividends paid	(1,200)
Cash generated from financing activities	(790)
Net increase in cash and cash equivalents	110
Cash and cash equivalents at beginning of period	120
Cash and cash equivalents at end of period	230

Solution

Table 57. The values of cash-flow ratios for Anaconda Company

Return ratios	N	References
1.Accrual operating ratio	72.34% 2 points*	
2.Accrual ratio	3.61% 1 points*	$\geq 100\%$
3.Capital Expenditure Coverage ratio	74.38% 2 points*	
4.Free cash flow ratio	-34.45% 1 points*	

*The points are awarded according to the value of the realized values compared to the reference indicated by literature.

Additional data:

Free cash flow= Net operating cash flow- Purchased of fixed assets = 2,380-3,200= (820) \$

Accrual operating ratio reflects a degree of generate cash-flows from the operating profit of 72.34 % for the current year N. The liquidity of the company is questioned when the accrual operating ratio below 100%. Because the giving data regards only a period, the analyse of tendency can not be performed, therefore the diagnostic assesement refers only to the state of the indicators. Weak state= 2 points (according to the simple matrix).

Accrual ratio reflects even higher liquidity problems. Thus, only a percent of 3.61 % of the net profit can be turn into liquidity. Critical state= 1 point.

Capital Expenditure Coverage ratio reflects a degree of cover the capital expenditure from the operating cash-flow generated from activity of 74.38%. Thus, the Anaconda company has dificulty to met the investment policy without resorting to loans. Weak state= 2 points.

Free cash flow ratio reflects a negative value, meaning that Anaconda company has dificulty to pay dividends, pay debts, buy back stock from the operating activity. Capital expenditures are 820\$ higher than the operating cash-flow generated by the activity.

Table 58. Diagnosis of cash-flow

Indicators	Observations	SWOT Diagnosis	Points
1.Accrual operating ratio	Weak state	Weak state	2
2.Accrual ratio	Critical state	Critical state	1
2.Capital Expenditure Coverage ratio	Weak state	Weak state	2
3.Free cash flow ratio	Critical state	Critical state	1
Diagnostic of cash-flow	CRITICAL POINT Very weak state		1.5*

* The average of indicators is used, considering the equal importance between them.

3.7. Diagnosis of risks

Generally, risks represents the likelihood of a prejudicial event to the entity. The risks that might prejudice the financial-economic activity of a company are of different natures, as follows: currency risk, liquidity risk, the risk related to the economic environment. A particular risk with direct implications in the field of economic and financial analysis is the operational risk and financial risk, as they are presented in the following chapters.

3.7.1. Diagnosis of operational risk

The operational risk can be defined as the inability of the entity to adapt in time and at the lowest cost to economic and social changes in environmental conditions. Therefore the economic risk expresses the volatility of the economic outturn based on the operating conditions.

Economic risk can be assessed in two ways:

- Through the deviation of the level of profit over a period of time compared to the break-even-point;
- Through the average deviation of the profit compared to its average, in several successive time periods (coefficient of variation).

a) Operational risk based on break-even-point

The calculation and significance of the operational risk are presented in the table below:

Table 59. Calculation and significance of operational risk based on break-even-point

No.	Indicators	Formula	Explanations
1.	Break-even-point	- in physical units: $Q^* = \frac{FC}{P - V} = \frac{FC}{Mv}$ - in value units: $Sales^* = \frac{FC}{1 - Rv} = \frac{FC}{Rmv}$	The break-even-point is the point at which the revenues equals the cost associated to receiving the revenues (operating expenses delimited of fixed costs and variable costs); it is calculated for a product or an entire business in physical or value units.

2.	Position coefficient of revenues (or sales) compare to break-even-point	<p>- in absolute: $\alpha = \text{Sales} - \text{Sales}^*$ - in relative (elasticity coefficient) $\alpha' = \frac{\text{Sales} - \text{Sales}^*}{\text{Sales}^*} \times 100$</p>	<p>It is shown the revenues (sales) in relation to the break-even-point. It is used to assess the degree of operating risk that the company is encountered to.</p>
----	--	--	---

Where:

- Q^* is the number of product units corresponding to the break-even-point;
 - FC is total fixed costs;
 - P is the price per unit,
 - V is the variable cost per unit;
 - Mv is margin of variable cost per unit ($Mv = P - V$) ;
 - Sales* are sales corresponding to the break-even point;
 - \bar{R}_v is the average of variable cost rate determined as follow:
- $$\bar{R}_v = \sum_{i=1}^n p_i \times \frac{V_i}{P_i}, \text{ where}$$
- V_i is the variable cost for product assortment i;
 - P_i is the price for product assortment i;
 - „ p_i “ is the weight of product assortment “i” in total product.
 - „n“ is number of product assortment realized by the company.
 - R_{mv} is contribution margin rate ($R_{mv} = 1 - \bar{R}_v$)

Table 60. Grid of diagnosis the operational risk based on Break-even-point

No.	References	Interpretations	SWOT diagnostic	Points
1.	$\alpha' < 10\%$ means sales is up to 10% higher than the breakeven point;	<i>High operating risk</i>	Critical/ Improvement	2.5-3
			Critical / Maintain	2
			Critical / Impairment	1-1.5
2.	10 % $< \alpha' < 20\%$ means value of sales range between 10% to 20% higher than that corresponding to the break-even point;	<i>Medium operating risk</i>	Medium/ Maintain	3
3.	$\alpha' > 20\%$ means value of sales exceeds the value of break-even-point by <i>over 20 %</i> .	<i>Low operating risk</i>	Strong/ Improvement	4.5 – 5
			Strong/Maintained	4
			Strong/ Impairment	3 – 3.5

b) Operating risk based on fluctuation results

Another approach concerns the assessment of the operational risk in terms of variability of the operating result compared to its average for the past financial periods.

Table 61. Calculation and significance of operational risk based on fluctuation results

No.	Indicators	Formula	Explanations
1.	Standard deviation of operating profit	$\sigma = \sqrt{\frac{\sum_{t=1}^T (OP_t - \bar{OP})^2}{T}}$	Shows how much variation or dispersion exists in operating comparing to the average (mean) or operating profit (\bar{OP}) over the period $t = 1, T$
2.	Coefficient of variation	$Cv\% = \frac{\sigma}{OP} \times 100$	Shows the mean deviation of the operational profit compared to its average both determined on several successive periods of time.

Table 62. Grid of operational risk based on fluctuation results

No.	References	Interpretations	SWOT diagnostic	Points
1.	Cv % > 30-35 % means sales differ by more than 30-35% compared to its average over several consecutive periods.	<i>High operating risk</i>	Critical/ Improvement	2.5-3
			Critical / Maintain	2
			Critical / Impairment	1-1.5
2.	Cv % ≈ 30-35 % means sales differ by approximately 30-35% compared to its average over several consecutive periods.	<i>Medium operating risk</i>	Medium/ Maintain	3
3.	Cv % < 30-35 % means sales deviate by up to 30-35% compared to its average over several consecutive periods.	<i>Low operating risk</i>	Strong/ Impairment	3 – 3.5
			Strong/Maintain	4
			Strong/ Improvement	4.5 – 5

Table 63. Diagnostic of operational risk

Indicators	Observations	SWOT diagnostic	Points	Importanc e	Scores	Measur es
1. Break-even-point	n1	p1	n1xp1	...
2. Fluctuation of results	n2	p2	p2xp2	...
Diagnostic of operational risk	WEAK –STRONG			100 %	$\bar{N} = \sum_{i=1}^n N_i x P_i$...

3.7.2 Diagnostic of financial risk

The financial risk expresses the variability of the results indicators under the financial structure of the entity (the proportion of equity to debt) and strictly follows the indebtedness of the entity.

The indebtedness of the entity made either by credit bonds or by bank credit has implications for the financial management of the entity. Because the financial burdens resulting from loans and materialized in interest and commissions are not related to profit (they are considered fixed) the difference between the higher rate of return on capital and the cost of loaning remains at the entity's disposition. Therefore any decrease in efficiency of capital use represents the risk of profit reduction or cancellation.

The development of the financial risk diagnostic is based on two main approaches:

- a) The first term in the analysis of financial risk is related to the use of the concept of break-even point or the critical point, which takes into account financial expenses (bank interest) that at a certain level of activity are considered fixed costs.
- b) On another level the financial risk sees the profit as a result of a financial policy that implies a certain relation between equity and debt. The return on equity is necessary to analyze in terms of the entity's policy of indebtedness. The influence of the indebtedness over the return on equity is called financial leverage or leverage.

The calculation and significance of financial risk from the two points of view are presented in the tables below:

a) Financial risk based on break-even-point;

Table 64. Calculation and significance of financial risk based on break-even-point

No.	Indicators	Formula	Explanations
1.	Global break-even-point	- - in physical units: $Q^* = \frac{FC + I}{P - V} = \frac{FC + I}{Mv}$ - in value units: $Sales^* = \frac{FC + I}{1 - Rv} = \frac{FC + I}{Rmv}$	The break-even-point is the point at which the revenues covers the operating costs (fixed and variable), interest and expenses the result being zero; beyond this point the activity of the entity becomes profitable.
2.	Position coefficient of revenues (or sales) compare to break-even- point ($\alpha ..$)	- in absolute: $\alpha = Sales - Sales^*$ -in relative: $\alpha .. = \frac{Sales - Sales^*}{Sales^*} \times 100$	It is used to assess the degree of financial risk which threatens the company's activity.

Where: "i" represents the interest expenses of the period, which correspond to bank loans contracted by the company;

Table 65. Grid of diagnosis the financial risk based on Break-even-point

No.	References	Interpretations	SWOT diagnostic	Points
1.	$\alpha .. < 10\%$ means sales is 10% higher than the global breakeven point;	<i>High financial risk</i>	Critical/ Improvement	2.5-3
			Critical / Maintain	2
			Critical / Impairment	1-1.5
2.	10 %< $\alpha .. < 20\%$ means value of sales is 10% to 20% higher than that corresponding to the global break-even point;	<i>Medium financial risk</i>	Medium/ Maintain	3
3.	$\alpha .. > 20\%$ means value of sales exceeds the value of global break-even-point by over 20 %.	<i>Low financial risk</i>	Strong/ Improvement	4.5 – 5
			Strong/Maintain	4
			Strong/ Impairment	3 – 3.5

b) Financial risk based on financial leverage

Table 66. Calculation and significance of financial leverage

No.	Indicators	Formula	Explanations
1.	Financial leverage (the influence of ROA on ROE)	$ROE = \frac{\text{Net profit}}{\text{Shareholder's Equity}} \times 100$ $ROE = \left[ROA + (ROA - i) \times \frac{\text{Debts}}{\text{Equity}} \times 100 \right] (1 - t)$ $ROA = \frac{\text{Net profit}}{\text{Total assets}} \times 100$	Shows the influence of the indebtedness over the return on equity and it is called financial leverage or simply, leverage. It measures the positive or negative influence of the indebtedness on the financial return.

Where: ROE is Return on shareholders' equity; ROA is Return on assets; i is debt interest rate; t is effective tax rate.

Table 67. Grid of operational risk based on financial leverage

No.	References	Interpretations	SWOT diagnostic	Points
1.	ROA < i %,	<p>The cost of debt is higher than the return on assets and the return on equity is a decreasing function of leverage. In this case it is necessary to minimize the ratio debt / equity as leverage affects the performance of the entity.</p> <p>→High financial risk</p>	Critical/ Improvement	2,5-3
2.			Critical/ Maintain	2
3.			Critical/ Impairment	1-1,5
2.	ROA is low or fluctuating	<p>It is preferable to work in equity financing.</p> <p>→High financial risk</p>	Critical-Weak	1-2
3.	ROA= i %	<p>The situation reflects stability in the financial structure.</p> <p>→Medium financial risk</p>	Mean/ Maintain	3
4.	ROA > i %	<p>The situation is favorable to shareholders, the return on equity is being an increasing function of leverage; the entity may continue to use leverage because RRF is growing.</p> <p>→Reduced financial risk.</p>	Strong/ Improvement	4,5 – 5
			Strong/ Maintain	4
			Strong/ Impairment	3-3,5

Table 68. Diagnostic of financial risk

Indicators	Observations	SWOT Diagnosis	Points	Importance	Scores	Measures
1.Break even point	n1	P1	n1xp1	...
2. Financial leverage	n2	P2	n2xp2	...
Diagnostic of financial risk	WEAK- STRONG POINT			100%	$\bar{N} = \sum_{i=1}^n n_i x p_i$	

Table 69. SYNTHESIS OF OPERATING AND FINANCIAL RISK DIAGNOSIS

Indicators	Observations	SWOT Diagnosis	Points	Importance	Scores	Measures
1.Diagnostic of operational risk	N1	P1	N1xP1	...
2.Diagnostic of financial risk	N2	P2	N2xP2	...
Diagnostic of risks	WEAK- STRONG POINT			100%	$\bar{N} = \sum_{i=1}^n nispi$	

The necessary measures to diminish these risk categories should be directed towards increasing sales policies, towards policies of reduced costs (fixed and variable) but also towards the policies concerning a better management of the resources controlled by the entity, in order to achieve a value of economic return higher than the bank interest rate.

Example

In order to asses his decision for growing the activity, the manager of Anaconda Company is interested to find a diagnostic of risk (operational and financial risk). The required data are provided by financial statements of Anaconda Company, at December year N (as they were presented in the chapters presented before).

Solution

Table 70. The values of risk indicators for Anaconda Company

Risk indicator	N	N-1	References**
I. Operating risk indicators			
Break even point (Sales *)	8,964	10,817	-
Elasticity coefficient (α')	2.42* 5 points	1.73* 5 points	> 0.2 (20%)
II. Financial risk indicators			
Global break even point (Sales *)	11,601 \$	13,963 \$	-
Elasticity coefficient (α'')	1.64* 5 points	1.11* 5 points	> 0.2 (20%)
Financial leverage			
Return on assets (ROA)	46.14%	28.92%	ROA > i%
The interest debt rate (i)	21.28%	8.93%	
Corelation between ROA and i	ROA > i% 5 points	ROA > i% 5 points	

Additional calculations:

Elements	N	N-1
1. Fixed cost	1,360 \$	1,210 \$
2. Sales	30,650 \$	29,500 \$
3. Variable costs	26,000 \$	26,200 \$
4. $\bar{R}v$ (Variable cost/Sales)	0.85	0.89
5. $\bar{R}mv$ (1 - $\bar{R}v$)	0.15	0.11
6. Break even points (1)/(5)	8,964 \$	10,817 \$
7. Elasticity coefficient (α') ((2)-(6)) / (6)	2.42	1.73
8. Interest	400 \$	352 \$
9. Global break even point ((1)+(8)) / (5)	11,601 \$	13,963 \$
10. Elasticity coefficient (α') ((2)-(9)) / (9)	1.64	1.11
11. Total debts	1,880 \$	3,940 \$
12. The interest debt rate i (8) / (11)	21.28%	8.93%

Break even point. The values of elasticity coefficient (for diagnosing the break even point) takes very good values of 1.73 (year N-1) and 2.42 (year N), meaning that the performed revenues of Anaconda Company could very well cover the cost of activity (fixed and variable costs) and may obtain significant values of gross profits. Strong state/ slow improvement= 4.5.

Analysis of operational risk by **Fluctuation of results** cannot be performed because the giving data refer only maximum two periods (the current year and the previous one).

Global break even point. The values of elasticity coefficient, used for diagnosing the global break even point, takes very good values of 1.11 (year N-1) and 1.64 (year N), meaning that the Anaconda Company performed high revenues which could very well cover the whole engaged cost (including the cost of loan), and thus the company may obtain significant values of gross profits. Strong state/ slow improvement= 4.5.

Financial leverage. The financial leverage is positive for all periods (ROA > i%) meaning that the return obtain from activity could best cover the cost of loan. However, the correlation between ROA and interest rate i deteriorates (the ratio ROA/i decrease from 3.23 to 2.16), meaning that increasing of interest rate is higher than increasing of ROA, over the analyzed period. Strong state / slow impairment = 3.5.

Table 71. Diagnostic of operational risk

Indicators	Observations	SWOT diagnostic	Points
1. Break-even-point	Very good state	Strong state/ slow improvement	4.5
Diagnostic of operational risk	STREINGHT POINT Very good state		

Table 72. Diagnostic of financial risk

Indicators	Observations	SWOT Diagnosis	Points
1.Break even point	Very good state	Strong state/ slow improvement	4.5
2. Financial leverage	Satisfying state	Strong state / slow impairment	3.5
Diagnostic of financial risk	GOOD POINT Good state		

* The average of indicators is used, considering the equal importance between them.

Table 73. SYNTHESIS OF OPERATING AND FINANCIAL RISK DIAGNOSIS

Indicators	Observations	SWOT Diagnosis	Points
1.Diagnostic of operational risk	Very good state	STREINGHT POINT	4.5
2.Diagnostic of financial risk	Good state	GOOD POINT	4
Diagnostic of risks	GOOD POINT Good to very good state (low to very low exposure to risks)		

* The average of indicators is used, considering the equal importance between them.

3.8. Diagnostic of stock market indicators

For this category of companies, the analysis of the market ratio diagnostic will have a specific connotation capturing the specific needs of financial information of a particular category of users such as the investors.

The stock market performances or the performances realized by the listed companies represent the highest analytic degree of emphasizing the performance of an economic entity, performance which is calculated only for a small group of companies, namely those that have reached a high level of performance which allows them to listed their shares on the stock market.

Stock market indicators can only be calculated for publicly traded companies as they relate to stock price. The calculation of these ratios helps the investors to select the titles they want in their portfolio and which are fundamentally good, using the so-called fundamental analysis. This type of analysis is complemented by a technical analysis, which enables the setting of the convenient input timing for those titles. Because the two types of analyzes are independent of each other, the signals provided by them are different. Therefore, the decision to purchase is desirable to be taken when the two types of signals converge.

In our opinion the main useful stock market indicators are the following:

1. ***Market capitalization (MC);***
2. ***Earning per Share (EPS);***
3. ***Cash EPS;***
4. ***Price-to-Earnings Ratio (PER or P/E);***
5. ***Price-to-Book-Ratio (PBR or P/B);***
6. ***Price-to Sales Ratio (PSR);***
7. ***Dividend per share (DPS);***
8. ***Dividend yield (DY);***
9. ***Dividend payout ratio (DP).***

In fundamental analysis, based on the interests of those who perform a stock market analysis, there are distinguish various forms of market stock indicators, as shown in the table 74.

Table 74. Calculation and interpretation of stock market indicators

No	Indicators	Formula	Explanations
I. Stock market growth indicators			
1.	Market capitalization (MC)	$MC = \text{Share price} \times \text{Number of shares}$	Market capitalization represents the market value of a listed company and returns the public opinion on the net value of a company, being a determinant factor in the shares evaluation.
2.	Earning per Share (EPS)	$\text{EPS} = \frac{\text{Earnings}}{\text{Number of shares}}$ Earnings = Net profit - Dividends on preferred stock	Shows the net result produced by a share during a financial year.
3.	Cash EPS	$\text{Cash EPS} = \frac{\text{Operating cash-flow}}{\text{Number of shares}}$	Shows how many liquid assets resulted from operating activities can a share to produce in the during a financial year.
4.	Price-to-Earnings Ratio (PER or P/E)	$\text{PER} = \frac{\text{Share price}}{\text{EPS}}$	Shows how much the investors are willing to pay for a monetary unit for a reported profit.
5.	Price-to-Book-Ratio (PBR or P/B)	$\text{PBR} = \frac{\text{Share price}}{\text{Book value per share}}$	Represents the value that financial markets provide to the management of an entity.
6.	Price-to Sales Ratio (PSR)	$\text{PSR} = \frac{\text{Share price}}{\text{Sales per share}}$ or $\text{PSR} = \frac{\text{Market capitalization}}{\text{Total sales}}$	Represents the company's effort in the form of the price paid for the purchased shares in the total effects as net turnover.
II. Dividend ratios			
1.	Dividend per share (DPS)	$\text{DPS} = \frac{\text{Annual dividends}}{\text{Number of shares}}$	Shows the state of the dividend reported per share.
2.	Dividend yield (DY)	$\text{DY} = \frac{\text{Annual dividends per share}}{\text{Share price}}$	Measures the profit collected by shareholders from investments in the entity's shares.
3.	Dividend payout ratio (DP)	$\text{DP} = \frac{\text{DPS}}{\text{EPS}} \times 100$ or $\text{DP} = \frac{\text{Annual dividend}}{\text{Earning yeald}} * 100$	Measures the extent to which the net income is distributed to shareholders as dividends.

Stock market growth indicators are important mainly to majority shareholders or to long-term investors in the capital of a company, who are concerned for obtaining a long-term stock yield of their shares.

Dividend ratios represent an importance mainly to the minority shareholders or to short-term investors in the capital of a company, who are concerned in obtaining a short-term stock yield of their shares, so their interest will be directed to the dividends distributed.

Table 75. Grid of stock market indicators diagnostic

No.	Indicators	References*	SWOT Diagnosis	Points
1.	Market capitalization (MC)	Average for the emerging markets: 19,939,734 \$ Optimum trend :↑	Weak/ Strong/ Impairment/ Improvement	1-5
2.	Earning per Share (EPS)	Optimum trend :↑		
3	Cash EPS	Optimum trend :↑		
4.	Price-to-Earnings Ratio (PER or P/E)	Average for the emerging markets: 108.96 \$ Optimum trend :↑		
5.	Price-to-Book-Ratio (PBR or P/B)	Average for the emerging markets: 1.59 Optimum trend :↑		
6.	Price-to Sales Ratio (PSR)	Average for the emerging markets: 1.43 Optimum trend :↑		
7.	Dividend per share (DPS)	Average for the emerging markets: Optimum trend :↑		
8.	Dividend yield (DY)	Average for the emerging markets: 2.59% Optimum trend :↑		
9.	Dividend payout ratio (DP)	Average for the emerging markets: 46.07% Optimum trend :↑		

* The specific of activity has a big importance in determining the references of stock market indicators. The benchmark levels of stock market indicators are their average recorded at the level of the sector in which the entity operates. The reference levels presented in the table reflect a general average on the emerging market (see Annex 1 "Sectoral Averages Indicators Database"). Sectoral average levels may fluctuate tremendously from one sector to another, so the use of specific industry / domain references is extremely necessary. For this purpose, a useful source of data can be represented by Annex 1 "Sectoral Average Indicators Databases".

Finally, the stock market indicators diagnostic is developed, as shown in the table 76. The importance weights may be significantly differentiated from the two types of stock market indicators (growth and dividend), in favor of those which improve the value of a company (which represents the general objective of any

economic activity). Such weights can be for example as 90% to 10% or 80 % to 20%, depending on the interest of those carrying out the analysis (the interests are differentiated by the majority and minority shareholders).

Table 76. DIAGNOSTIC OF STOCK MARKET RATIOS

Indicators	Obs.	SWOT Diagnosis	Points	Imp.	Scores	Measures
I. Stock market growth indicators				P1		
1.Market capitalization (MC)	n1	p1	n1xp1	...
2.Earning per Share (EPS)	n2	p2	n2xp2	...
3.Cash EPS	n3	p3	n3xp3	...
4.Price-to-Earnings Ratio (PER or P/E)	n4	p4	n4xp4	...
5.Price-to-Book-Ratio (PBR or P/B)	n5	p5	n5xp5	...
6.Price-to Sales Ratio (PSR)	n6	p6	n6Xp6	...
A.Diagnostic of grow market ratios	WEAK-STRONG POINT			100 %	$\bar{N}_A = \sum_{i=1}^6 n_i x_i p_i$	
II. Dividend ratios				P2		...
1.Dividend per share	n1	p1	n1xp1	...
2.Dividend yield	n2	p2	n2xp2	...
3.Dividend payout ratio	n3	p3	n3xp3	...
B.Diagnostic of dividend ratio	WEAK- STRONG POINT			100 %	$\bar{N}_B = \sum_{i=1}^3 n_i x_i p_i$...
Diagnostic of market ratios	WEAK- STRONG PONT			100 %	$\bar{N} = \sum_{i=1}^2 \bar{N}_i x_i P_i$	

Example

An investor is interested to find the market performance of Anaconda Company in order to asses his decision of capital investement.

Solution

The values of stock market indicators for Anaconda Company are presented in table 77. Looking at these results, the following interpretations can be done.

Market capitalization (MC) of Anaconda Company register a value of 40,320 \$ (N-1) which increase at 49,400 \$ (N), meaning an increase with 22.5 % over

the period. The value on the market of Anaconda Company is slightly below the sector average (55,777 \$). Weak point/slow improvement=3 points.

Earning per share (EPS) increases with 53 % from one year to the next, respectively from 0.15 (year N-1) to 0.23 (year N). Slow improvement=4 points.

Cash EPS in the current year N is 0.18. Compared with EPS, one can observe that Cash EPS is below the level of EPS. Actually, the level of generating cash EPS from EPS is 78.2 %. Because the data for the previous year are not available and in absence of any reference level, we can not pronounce on a fundamental diagnosis for this indicator.

Price-to-Earnings Ratio (PER) reflects critical values compared with the sector average, of 21.22 (year N-1), decrease at 16.2 (year N). Critical state/slow impairment= 2 points.

The rapport between Share price and Book value (**Price-to-Book-Ratio PBR**) reflects strong values for Anaconda Company, well above the sector average, which is very good appreciated by the investors, even though, the value of PBR decrease with 32 % from the year N-1 to the next. Strong state/slow impairment= 3.5 points.

The price paid for one unit of sales (**Price-to Sales Ratio PSR**) is about 3 times over the sector average and increases with 17 % from one year to the next. Strong state/ slow improvement=4.5 points.

Dividend per share (DPS) for all period is 0.09. A reference level for this indicator is not available, also the data for the previous year is not known. Under these circumstances, the diagnostic of DPS can be performed only regards the tendency. Maintain=3 points.

Dividend yield (DY) reflects higher values of 3 % (year N-1) and 2 % (year N), compared with 1.49 %, which is the sector average.

Dividend payout ratio (DP) reveals a good value above the sector average in the year N-1, of 58% , which decreases at 39%, in the next year N, going below the sector average. Mean state ((4+2)/2=3 points)/slow impairment= 2.5 points.

Table 77. The values of stock market indicators for Anaconda Company

Risk indicator	N	N-1	References**
I. Market growth ratios			
1. Market capitalization (MC)	49,400 \$* 2 points	40,320 \$* 2 points	55,777 \$
2. Earning per Share (EPS)	0.23	0.15	-
3. Cash EPS	0.18		-
4. Price-to-Earnings Ratio (PER)	16.20* 1 point	21.22* 1 point	62.77
5. Price-to-Book-Ratio (PBR)	10.44* 5 points	15.33* 5 points	1.63
6. Price-to Sales Ratio (PSR)	1.61* 5 points	1.37* 5 points	0.50
II. Dividend ratios			
1. Dividend per share (DPS)	0.09	0.09	-
2. Dividend yield (DY)	2%* 4 points	3%* 4 points	1.49%
3. Dividend payout ratio (DP)	39%* 2 points	58%* 4 points	46.20%

** the specific reference registered for Electronics (Consumer & Office) domain in which Anaconda Company activates.

*The points are awarded according to the value of the realized values compared to the established average of sector (over or under the average levels).

Additional data and calculations:

Elements	N	N-1
Number of shares	13,000	12,600
Share price	3.8	3.2
Book value per share	0.36	0.21
Dividend paid	1,200	1,100

Table 78. Diagnostic of market growth indicators

Indicators	Observations	SWOT Diagnosis	Points
1. Market capitalization (MC)	Medium-accepted state	Weak point/slow improvement	3
2. Earning per Share (EPS)	Good state	Slow improvement	4
3. Cash EPS	-	-	-
4. Price-to-Earnings Ratio (PER or P/E)	Weak state	Critical state/slow impairment	2
5. Price-to-Book-Ratio (PBR or P/B)	Satisfying state	Strong state/slow impairment	3.5
6. Price-to Sales Ratio (PSR)	Very good state	Strong state/ slow improvement	4.5
I. Diagnostic of market growth ratios	UNCERTAIN POINT Satisfying state		3.4*

* The average of indicators is used, considering the equal importance between them.

Table 79. Diagnostic of dividend ratios

Indicators	Observations	SWOT Diagnosis	Points
1. Dividend per share (DPS)	Medium-accepted	Maintains	3
2. Dividend yield (DY)	Medium-accepted	Good state/slow impairment	3
3. Dividend payout ratio (DP)	Unsatisfying	Mean state/slow impairment	2.5
II. Diagnostic of dividend ratio	UNCERTAIN Unsatisfying to medium accepted state		2.83*

* The average of indicators is used, considering the equal importance between them.

Table 80. Diagnostic of stock market indicators

Indicators	Observations	SWOT Diagnosis	Points	Importance	Scores
I. Diagnostic of market growth ratios	Satisfying state	UNCERTAIN POINT	3.4	70%	2.38
II. Diagnostic of dividend ratios	Unsatisfying to medium state	UNCERTAIN POINT	2.83	30%	0.84
Diagnostic of stock market indicators	UNCERTAIN POINT Medium-accepted				3.22

Because the market growth ratios reflect more consistent information regarding value creation of the companies compared with the dividend ratios, we will give them much more importance (let's say 70%). Under these conditions, the final score of market ratios is 3.22, reflecting a medium-accepted performance realized by Anaconda Company on the market. The main weakness regard the dividend ratios, especially Dividend payout ratio. Low values are also registered by Price to earning ratio.

3.9 The synthesis of financial diagnosis

Based on the partial diagnostics developed in the chapters aforementioned, it can be proceeded to develop a diagnosis of the overall financial state, as shown in the table 81.

Table 81. THE SYNTHESIS OF FINANCIAL DIAGNOSTIC

Indicators	Observations	SWOT Diagnosis	Points	Importance	Scores	Measures
1. Diagnostic of liquidity and financial solvency	N1	P1	N1xP1	...
2. Diagnostic of gearing	N2	P2	N2xP2	...
3. Diagnostic of activity	N3	P3	N3x P3	...
4. Diagnostic of profitability	N4	P4	N4xP4	...
5 Diagnostic of cash-flow	N5	P5	N5xP5	...
6. Diagnostic of risks	N6	P6	N6x P6	...
7. Diagnostic of stock market indicators	N7	P7	N7xP7	...
THE SYNTHESIS OF FINANCIAL DIAGNOSTIC	WEAK- STRONG POINT			100 %	$\bar{N} = \sum_{i=1}^n N_i x P_i$	

The importance weights can be differentiated by the priority information needs of the one carrying out the analysis (see chap. 1.3 Business diagnosis' users). Thus a diagnosis of liquidity and solvency, gearing and cash-flow will be of priority when analysis is carried out by a financial institution that evaluates the creditworthiness of a company.

Depending on the value of the final score obtained, a diagnostic of global performances of an entity differs in the following categories:

- **Strong/strength diagnostic – Category A** if $4.5 \leq \bar{N} \leq 5$. In this case the financial state of the company is very strong. The development potential is very high. The position on the life cycle curve is development and maturity.
- **Good diagnostic – Category B** if $3.5 \leq \bar{N} < 4.5$. In this case the business is viable, the future development of the company may be occur. The position on

the life cycle curve is development and maturity; the required strategies are both investment and neutral strategies.

- **Average-acceptable diagnostic – Category C** if $2.5 \leq \bar{N} < 3.5$. In this case, the business faces some problems, the opportunities for growth are uncertain, possibilities of recovery are reduced. The position on the life cycle curve is release or decline; therefore the necessary strategies are investment or disinvestment strategies.
- **Weak diagnostic – Category D** if $1.5 \leq \bar{N} < 2.5$. In this case the business is facing major problems. The position on the life cycle curve is release or decline; therefore the necessary strategies are investment or disinvestment strategies.
- **Critical diagnostic – Category E** if $1 \leq \bar{N} < 1.5$. In this case the company's state is in a very serious condition, it is facing financial illiquidity and there is a high risk of imminent bankruptcy.

Example

Giving the results of partial diagnostics determined before for Anaconda Company, its manager is interested to know which is the general financial state of the company.

Solution

Table 82. THE SYNTHESIS OF FINANCIAL DIAGNOSTIC

Indicators	Observations	SWOT Diagnosis	Points
1. Diagnostic of liquidity and financial solvency	Good state	GOOD POINT	3.9
2. Diagnostic of gearing	Good state	GOOD POINT	4.14
3. Diagnostic of activity	Satisfying state	GOOD POINT	3.62
4. Diagnostic of profitability	Very good state	STRONG POINT	4.33
5 Diagnostic of cash-flow	Very weak state	WEAK POINT	1.5
6. Diagnostic of risks	Good to very good state	GOOD POINT	4.25
7. Diagnostic of market ratios	Satisfied state	UNCERTAIN POINT	3.22
THE SYNTHESIS OF FINANCIAL DIAGNOSTIC	Good diagnostic Category B		3.56*

* The simple average is used, considering the diagnostics of equally importance.

Concluding, Anaconda Company has good financial performances from its activity, providing a high level of trust to the stakeholders. The main weakness refers to the management of cash-flow, which is a critical point. The management of Anaconda Company needs to adopts a new strategy on trade policy, especially viewing trade payable strategy (the company need to negotiate the longer payment terms). This strategy will consolidate the operating cash-flow and thus the value of free cash-flow also may increase and could better cover the capital expenditure required by the investment policy of the company. Market indicators requires also a consolidation through a more pronounced dividend policy which could be performed after adopting the measures of increasing the financial performances which are mentioned before, thus conducting to a higher liquidity state.

FOR AUTHOR USE ONLY

CHAPTER 4. DIAGNOSIS OF ESG DIMENSIONS OF PERFORMANCES

At European level, the European Council adopted the first Sustainable Development Strategy of the European Union in Goteborg (2001), which was later developed and implemented in all EU countries. Within this strategy, sustainable development is equivalent *to meeting the needs of present generations, without compromising the ability of future generations to meet their own needs.*

Businesses must be aware that for business success, they must offer and ensure the protection of the environment and the right working conditions, give collective rights to employees, cooperate for this purpose with the local communities in which they operate, trade unions, non-governmental organizations, governmental and governmental institutions. In the context of sustainable development, the concept of *corporate social responsibility* gradually emerges. This concept defines the orientation and attitude of a company to voluntary integrate in its strategy and work the social concerns and those for a cleaner and more friendly environment, while ensuring the economic success of the business.

In the current context of sustainable development, the governance mechanisms based purely on the financial targets leave place for a governance based on a multi-party approach, by reconciling the interests of all stakeholders, based on social responsibility and a pertinent communication, integrating the financial, social and environmental issues. Thus, the role of an effective corporate governance is crucial in ensuring the organization's sustainability, thereby ensuring the improvement of economic efficiency while establishing an attractive investment climate.

The transformations brought by the “new economy” are being transposed at microeconomic level into mutations on organizational performances, by adopting new performance standards that go beyond the economic sphere. We are talking about new environmental and social standards that implicitly generate the adoption

of new standards of corporate governance. These non-financial dimensions of the performances come to complement the financial dimension of the company's performance assessment.

As we have already mentioned in Chapter 1 (1.5. Components of diagnostics) concerns about measuring non-financial performance by producing ESG (Environmental, Social and Governance) performance scores are now largely manifested by various international bodies, including rating agencies which evaluate the extra-financial performance, as being exclusive concerns.

But before these non-financial performances to be measured, they firstly need to be collected. The issue of providing continuous and comparable information of sustainability by the companies has tried to be worldwide resolved through the existence of several voluntary reporting initiatives. Social and environmental reporting practices have rapidly evolved over the last 10-15 years. Thus countries such as France, Denmark, Sweden, Netherlands, Australia and the United Kingdom are proposing or have already imposed to report some certain aspects of sustainability. But, these situations are exceptions. Generally, sustainable reporting is voluntary.

In this context, the need to standardize the reporting methodologies in the area of sustainability has emerged. A way in which companies demonstrate to the stakeholders that they take seriously the issue of social responsibility may consist in adhering to local and/or international reporting standards and guidelines. The most important reporting systems are proposed by the following organizations: UN Global Compact, OECD, CERES Principles, Global Reporting Initiative (GRI), Accountability (AA) 1000, Global Sullivan Principles, Caux Round Table Principles, Ethical Trading Initiative, ICC Business Charter for Sustainable Development. The adherence to these standards is voluntary, involving commitments that go beyond legal norms.

The Global Reporting Initiative (GRI) is the most publicized and successful project of this standardization trend. The mission of GRI is to develop and popularize a Sustainability Reporting Guide. Other sources of information on

corporate responsibility performance may be made up of various databases on such information as Kinder, Lydenberg, and Domini Inc. (KLD) database, one the most widely used source of information on Corporate Responsibility Performance (Waddock, 2003).

For the European Union space, recently (on 2014), European Commission has adopted the Directive 2014/95/EU which required to the large companies to disclose certain information on the way they operate and manage social and environmental challenges. These large companies include large public-interest companies with more than 500 employees, covering approximately 6,000 large companies across the EU, including listed companies, banks, insurance companies and other companies designated by national authorities as public-interest entities. These companies are required *to include non-financial statements in their annual reports from 2018 onwards.*

Directive 2014/95/EU impose to large companies to publish reports on the policies they implement in relation to the following issues:

- environmental protection;
- social responsibility and treatment of employees;
- respect for human rights;
- anti-corruption and bribery;
- diversity on company boards (in terms of age, gender, educational and professional background).

4.1 Diagnostic of the environmental performances

4.1.1. Some approaches

According to the Environmental Legislative Harmonization Guide of the European Union (1998), environmental performance reflects a measurable environmental management system result, linked to the organization's control over its environmental aspects, based on its policy, overall objectives and

environmental objectives. The environmental aspects that are legislated at the European Union level are: air quality; waste management; water quality; nature protection; industrial pollution control and risk management; chemical and genetically modified organisms; noise from vehicles and machinery; nuclear safety and radiation protection; climate change; civil protection; policy and international cooperation.

The ISO 14000 standards, approved in 1996, describe the components and characteristics of an effective system for managing a corporation's environmental impacts (Tibor and Feldman, 1996). Standard ISO 14001 was developed to assist companies with a framework for better management control which has the clear objective to reduce their environmental impacts. ISO 14001 was recently revised (in 2015) in order to update it with the needs of modern businesses and the latest environmental thinking. Environmental performance is defined by ISO 14001 as a result of environmental entity management. It reflects the environmental impact on the entity over the reporting period and beyond. These standards does not set specific environmental performance criteria (Pintea, 2011) but they only set out the general directions of action for assuring a highest efficiency of the environmental management system.

Peter Drucker said „If you can't measure it, you can't improve it”, thus, the problem of measuring environmental performance become of extremely necessity in the management process.

According to ISO 14031, environmental performance assessment is "a process that facilitates management decisions relating to the organization's environmental performance by selecting indicators, collecting and analyzing data, evaluating information by reference to the environmental performance criterion, reporting and communication and periodically reviewing, and also environmental performance improvement "(International Organization for Standardization, 1999).

The evaluation process is a complex one, especially due to the close connection with the specific field in which the society activates, and thus conducting to a strong specific sectorial pattern of the environmental

performances. The selection of the most representative environmental performance indicators thus becomes a highly disputed process, as they have to meet common requirements of affordability, comparability, representativeness, clarity and cost-benefit ratio.

In the specific literature, the selected indicators for the environmental performance measurements took into consideration certain areas of manifestation of the environmental performances, according to the different authors, as follows:

- ✚ **input environment indicators**, including indicators such as: environmental site planning (Jasch, 2000; Kuhre, 1998); energy consumption (Tibor, 1996; Kuhre, 1998; Jasch, 2000; Meyer, 2001; Clayton Group Services, 2001; International Organization for Standardization, 2006; Apajalahti, 2008); materials used (Morioka et al. (2005), Hoffrén and Apajalahti (2009), Hoffrén (2010); water consume (Müller and Sturm, 2001; Sturm et al., 2004).
- ✚ **output environment indicators**, referring to the following issues: climate change, oxygen deficiency in water systems (Pihlatie's, 2006); waste water (Chappin et al., 2007); the regulatory compliance (Vasanthakumar, 1999; Jasch, 2000; Tam et al. 2002; Thoresen, 1999; environment reports (Al-Tuwairi et al., 2004; Dasgupta et al., 2006; Cormier and Magnan, 2007; Moneva and Ortas, 2008); environmental auditing activities (Jasch, 2000)
- ✚ **both input and output environment indicators**, which involves combining some input and output indicators into environmental performance assessments. (Helminen, 1998; Tam and Le, 2007; Chappin et al., 2007, 2005; Wall-Markowski, 2004; Wall-Markowski et al., 2005; Wang et al., 2011; Yang et al., 2012; Koskela 2012; GRI Guides).

An important role in accessing the information needed to determine the environmental performance indicators has the sustainability reports of the companies. Nowadays, the world-wide dominant position for sustainable reporting is held by the Global Reporting Initiative. The Global Reporting Initiatives (GRI Guidelines), issued by the World Commission on Environment and Development, provides all companies and organizations with a comprehensive sustainability

reporting framework that is widely used around the world. Over time, there have been published four editions of the G4 Sustainability Reporting Guidelines, which are still in work.

In order to create a framework for environmental performance reporting, GRI uses combined measures to assess environmental performance as follows: evaluations of impacts related to inputs (such as energy and water) and outputs (such as emissions, effluents and waste); in addition, it covers biodiversity, transport, and product and service-related impacts, as well as environmental compliance and expenditures.

4.1.2 Assessing a fast diagnostic model of the company's environmental performances

For the purpose of building an environmental performance assessment model, we will rely on the GRI sustainability reporting system, which is the most widely used sustainability reporting framework.

Based on the SWOT analysis method combined with the evaluation grids method, we have the following steps conducting to a fast model of the company's environmental performances:

a) Selecting several representative indicators (criteria) for reflecting the environment performances;

According with the latest generation of GRI Guidelines (GRI G4, 2013), the *environmental performances* indicators are in number of 34 and are grouped in twelve area, as follows *Materials; Energy; Water; Biodiversity; Emissions; Effluents and waste; Products and services; Compliance; Transportation; Overall; Supplier environmental assessment; Environmental grievance mechanisms.*

b) Qualitative assessing of the environmental performances indicator and also of investigated areas:

For this purpose we have to determine the strengths and weaknesses of the environmental performances. In order to achieve this target, each of the 34 environmental performance indicators are evaluated and compared to the reference levels and the strengths and weaknesses of the performance level of the environmental performance are established.

The strengths points in the environment performances can be reflect by the following issue:

- the company carries out sustainability reporting, including environmental reporting;
- the existence of certified environmental management systems according to ISO 14001 family norms;
- reduction of emissions;
- efficient waste management;
- eco-design of products;
- reducing the risk of environmental penalties;
- reducing fines and costs associated with litigation on environmental issues;
- reducing the cost of remediation activities associated with environmental incidents;
- reduce the cost of resources and waste of material;
- reducing the impact on the environment and reducing the effects of water pollution, noise, etc.
- reduce the impact on natural resources to reduce the use of non-renewable and unsustainable natural resources such as oil, fuel, minerals, etc. ;
- reducing the impact on communities.

Weaknesses points in the environment performances may refer to the following issues:

- the company does not report sustainability;
- emission level exceeds standard / optimal levels;
- the company has no concerns about the recycling of waste;

- there are environmental penalties and / or their volume is increasing;
- there are litigations on environmental issues;
- the company's activity has a negative impact on the environment consisting of water, air pollution, noise pollution, etc. ;
- there are no concerns to reduce the impact on natural resources in terms of the procurement of renewable resources;
- the volume of environmental investments is reduced and / or significantly decreasing.

c) Ascribing scores from 1 to 5 for each of environmental performance indicator:

- if it is calculated only the status and the evolution tendency, the simple form of the chart as follow will be used:

Table 83. Chart for evaluate the status OR the tendency of an indicator

Note (N)	1	2	3	4	5
Status	Critical	Weak	Mean	Good	Strong
Tendency	Sudden impairment	Slow impairment	Maintaining	Slow improvement	Sudden improvement

- if there are evaluated at the same time both the level and the tendency, there will be used the complex, matrix-like chart, as follow:

Table 84. Chart for evaluate the status AND the tendency of an indicator

Tendency/Status	Critical	Weak	Average	Good	Strong
Sudden improvement	3	3.5	4	4.5	5
Slow improvement	2.5	3	3.5	4	4.5
Maintaining	2	2.5	3	3.5	4
Slow impairment	1.5	2	2.5	3	3.5
Sudden impairment	1	1.5	2	2.5	3

d) Ascribing weight of importance for each of environmental performance areas

e) Calculating the Environmental Performance Index, according to the relation:

$$E = \sum_{i=1}^n p_i n_i , \text{ where}$$

- p_i represents the importance ascribed for each environment area investigated.
- n_i represents the score of each area investigated.

g) Identifying the diagnosis category according to the table below. For this purpose, the following chart of global evaluation of the external environment proves to be very useful:

Table 85. Chart of environment performances diagnosis

State of indicator	Diagnosis of environment performances	
	Index value	SWOT Classified
Strong	5	Category A - STRONG
Very good	4.5	
Good	4	
Satisfactory	3.5	
Average-acceptable	3	Category C - UNCERTAIN
Non satisfactory	2.5	Category D - WEAK
Weak	2	
Very weak	1.5	
Critical	1	Category E - CRITICAL

g) Drawing up interpretation, recommendations and future action strategies.

Table 86. SYNTHESIS A DIAGNOSIS OF ENVIRONMENT PERFORMANCES

Areas	Indicators/Observations	SWOT Diagnostic	Points	Imp.	Scores
1.Materials	EN1 Materials used by weight or volume: How much non-renewable and renewable materials are used EN2 Percentage of materials used that are recycled input materials:	State/ Tendance	n1	p1	n1xp1
2.Energy	EN3 Energy consumption within organization EN4 Energy consumption outside the organization EN5 Energy intensity: Increase or decrease ? EN6 Reduction of energy consumption: EN7 Reduction in energy requirements of products and services:	State/ Tendance	n2	p2	n2xp2
3.Water	EN8 Total water withdrawal by source. EN9 Water sources significantly affected by withdrawal of water. EN10 Percentage and total volume of water recycled and reused.	State/ Tendance	n3	p3	n3xp3
4. Biodiversity	EN11 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas. EN12 Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected	State/ Tendance	n4	p4	n4xp4

	areas. EN13 Habitats protected or restored. EN14 Total number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk				
5. Emissions	EN15 Direct greenhouse gas (GHG) emissions EN16 Energy indirect greenhouse gas (GHG) emissions EN17 Other indirect greenhoase gas (GHG) emissions (Scope 3) EN18 Greenhouse gas (GHG) emissions intensity EN19 Reduction of greenhouse gas (GHG) emissions EN20 Emissions of o-zone depleting substances (ODS) EN21 NOx, SOx, and other significant air emissions	State/ Tendence	n5	p5	n5xp5
6.Effluents and Waste	EN22 Total water discharge by quality and destination. EN23 Total weight of waste by type and disposal method. EN24 Total number and volume of significant spills. EN25 Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally. EN26 Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.	State/ Tendence	n6	p6	n6xp6
7. Products and Services	EN27 Extent of impact mitigation of environmental impacts of products and services EN28 Percentage of products sold and their packaging material that are reclaimed by category	State/ Tendence	n7	p7	n7xp7
8.Compliance	EN29 Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with environmental laws and regulations.	State/ Tendence	n8	p8	n8xp8
9. Transport	EN30 Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce	State/ Tendence	n9	p9	n9xp9

10.Overall	EN31 Total environmental protection expenditures and investments by type	State/Tendance	n10	p10	n10xp10
11. Supplier environmental assessment	EN32 percentage of new suppliers that were screened using environmental criteria EN33 Significant actual and potential negative environmental impacts in the supply chain and action taken	State/Tendance	n11	p11	n11xp11
12. Environmental grievance mechanisms	EN34 Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms	State/Tendance	n12	p12	n12xp12
Diagnostic of environmental performances	WEAK-STRONG POINT		$E = \sum_{i=1}^{12} nixpi$		

4.2. Diagnosing the social performances

4.2.1. Some approaches

Social performances are directly related to the concept of corporate social responsibility and suppose and reflect the impact of the company on the social systems within which they function.

In the specialized literature various approaches in defining the term of social performances are found, as follows:

- ⇒ Social performance measures how well an institution has translated its social goals into practice (CGAP Workshop Paris 8 October 2004);
- ⇒ Social performance is measured through the principles, the actions and the corrective measures implemented (Comité d'Echange, de Réflexion et d'Information sur les Systèmes d'Epargne-crédit, *CERISE*);
- ⇒ Social performance is “a construct that emphasizes a company’s responsibilities to multiple stakeholders, such as employees and the community at large, in addition to its traditional responsibilities to economic shareholders” (Turban & Greening 1996);

⇒ Social performance consist in “a level of satisfaction of the actors, achieved through three levels of quality: the quality of the products appreciated by the external clients, the quality of the functioning and the quality of the management appreciated mainly by the "internal clients" (employees, managers)" (Savall and Zardet, 2003).

Due to the complexity and the qualitative dimensions of the concept of social performance, the measurement of social performances is considered by many authors to be a real challenge (Carroll, 1999; Graves and Waddock, 1994; Wokutch and McKinney, 1991; Chen, 2010).

Székely & Knirsch (2005) appreciate the following indicators as representative for the social performance:

- *Human rights*; the issue of respect for human rights, especially in poor countries in the context of globalization, is raised.
- *Occupational or employment related problems*; some aspects of health and safety at work, continuing training, industrial relations, salaries, benefits and compensation, working and employment conditions, etc. need to be assessed.
- *Relations with suppliers*; it is necessary to ensure the diversity of the suppliers, to evaluate the company's policies regarding the selection and evaluation of the suppliers, including the various contractual arrangements concluded with them.
- *Community initiatives*; the indicators used should reflect the contribution made to local economic development, involvement in local community issues, empowerment of employees and other issues.
- *Corporate philanthropy*; it is desirable to know different information about the donations made, the total value of pre-tax profits and the financing of private initiatives from private funds.

The GRI initiative is also remarkable in terms of evaluating and reporting on social performance. Thus, according to GRI, social performance indicators are divided into: *Labor practices*; *Human rights*; *Society* and *Product responsibility*.

Starting from the GRI initiatives for sustainable reporting (GRI 4), we will develop in the next chapters a model for social performance appraisal.

4.2.2. Assessing a diagnostic model of the company's social performances

Based on GRI 4 Guidelines (2013) the *social performances* indicators are grouped in *labor practices, human rights, society* and *product responsibility*.

For each area of research of the social performances, we will build a partial diagnosis, and then, they will be aggregated to obtain a final diagnosis of the company's social performances. We will use the same methodology which were used so far, meaning the SWOT method combined with the evaluation grid method.

The followings can be considered as **strength points** in assessing the company's social performance:

- Dialogue with stakeholders;
- Health / safety conditions;
- Trade union freedom and collective bargaining;
- Respect for fundamental rights;
- Gender equality;
- Anti-corruption initiatives;
- Opening to minorities and disadvantaged people;
- Contribution to local development.

Among the **weaknesses** in the area of environment performances the following issues can be mentioned:

- Accidents at work;
- Employee grievances;
- Confirmed incidents of corruption;
- Discrimination in work;
- Customer complaints about purchased products;
- Litigation by clients.

4.2.2.1. Assessing a diagnostic model of the labor practice performances

The main areas of interest in Labor practices are: *Employment; Labor/Management Relations; Occupational Health and Safety; Training and Education; Diversity and Equal Opportunity; and Equal remuneration for women and men; Supplier assessment for labor practice; Labor practice grievance mechanism.* Table 87 reflects an approach of a diagnosis of labor practice, in synthesis.

Table 87. SYNTHESIS A DIAGNOSIS OF LABOR PRACTICE

Areas	Indicators/Observations	SWOT Diagnosis	Poi nts	Imp.	Scores
1. Employment	LA1 Total number and rates of new employee hires and employee turnover by age group, gender, and region LA2 Benefits provided to full-time employees that are not provided to temporary or parttime employees, by significant locations of operation. LA3 Return to work and retention rates after parental leave, by gender.	State/ Tendence	n1	p1	n1xp1
2. Labor/ Management Relations	LA 4 Minimum notice period(s) regarding operational changes, including whether it is specified in collective agreements.	State/ Tendence	n2	p2	n2xp2
3. Occupational Health and Safety	LA5 Percentage of total workforce represented in formal joint management–worker health and safety committees that help monitor and advise on occupational health and safety programs. LA6 Type of injury and rate of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender. LA7 Workers with high incidence or high risk of diseases related to their occupation LA8 Health and safety topics covered in formal agreements with trade unions.	State/ Tendence	n3	p3	n3xp3
4. Training and Education	LA9Average hours of training per year per employee by gender, and by employee category. LA10 Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings. LA11 Percentage of employees receiving regular performance and career development reviews, by gender.	State/ Tendence	n4	p4	n4xp4

5. Diversity and Equal Opportunity	LA12 Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.	State/Tendence	n5	p5	n5xp5
6. Equal remuneration for women and men.	LA13 Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation.	State/Tendence	n6	p6	n6xp6
7. Supplier assessment for labor practice	LA14 Percentage of new suppliers that were screened using labor practices criteria LA15 Significant actual and potential negative impacts for labor practices in the supply chain and actions taken	State/Tendence	n7	p7	n7xp7
8. Labor practice grievance mechanism	LA16 Number of grievances about labor practices filed, addressed, and resolved through formal grievance mechanisms	State/Tendence	n8	p8	n8xp8
DIAGNOSIS OF LABOR PRACTICE	WEAK-STRONG POINT		$LA = \sum_{i=1}^8 nixpi$		

4.2.2.2. Assessing a diagnostic model of the human rights performances

The main areas of interest in Human Rights are: *Investment and Procurement Practices; Non-discrimination; Freedom of Association and Collective Bargaining; Child Labor; Prevention of Forced and Compulsory Labor; Security Practices; Indigenous Rights; Assessment; Remediation, Grievance*. Table 88 reflects an approach of a diagnosis of human rights in synthesis.

Table 88. SYNTHESIS A DIAGNOSIS OF HUMAN RIGHTS

Areas	Indicators/Observations	SWOT Diagnostic	Points	Imp.	Scores
1. Investment	HR1 Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening. HR2 Total hours of employee training on human rights policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	State/Tendence	n1	p1	n1xp1
2. Non-discrimination	HR3 Total number of incidents of discrimination and corrective actions taken.	State/Tendence	n2	p2	n2xp2

3. Freedom of Association and Collective Bargaining	HR4 Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measure taken to support these rights.	State/Tendence	n3	p3	n3xp3
4. Child Labor	HR5 Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor.	State/Tendence	n4	p4	n4xp4
5. Forced and Compulsory Labor	HR6 Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor.	State/Tendence	n5	p5	n5xp5
6. Security Practices	HR7 Percentage of security personnel trained in the organization's human rights policies or procedures that are relevant to operations.	State/Tendence	n6	p6	n6xp6
7. Indigenous Rights	HR8 Total number of incidents of violations involving rights of indigenous people and actions taken.	State/Tendence	n7	p7	n7xp7
8. Assessment	HR9 Total number and percentage of operations that have been subject to human rights reviews and/or impact assessments.	State/Tendence	n8	p8	n8xp8
9. Supplier human rights assessment	HR 10 Percentage of new suppliers that were screened using human rights criteria HR11 Significant actual and potential negative human rights impacts in the supply chain and actions taken	State/Tendence	n9	p9	n9xp9
10.Human Rights Grievance Mechanisms	HR12 Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms	State/Tendence	n10	p10	n10xp10
DIAGNOSTIC OF HUMAN RIGHTS	WEAK-STRONG	$HR = \sum_{i=1}^{10} nixpi$			

4.2.2.3. Assessing a diagnostic model of the society performances

Society performance indicators focus attention on the impacts organizations have on the local communities in which they operate, and disclosing how the risks that may arise from interactions with other social institutions are managed and mediated. The areas of research consist in: *Local Communities; Corruption; Public Policy; Anti-Competitive Behavior; Compliance; Supplier assessment for impact on society; Grievance mechanism for impact on society.*

Table 89. SYNTHESIS A DIAGNOSIS OF SOCIETY PERFORMANCES

Areas	Indicators/Observations	SWOT Diagnosis	Points	Imp.	Scores
1. Local Communities	SO1 Percentage of operations with implemented local community engagement, impact assessments, and development programs SO2 Operations with significant actual or potential negative impacts on local communities.	State/Tendance	n1	p1	n1xp1
2. Anti-Corruption	SO3 Total number and percentage of operations assessed for risks related to corruption and the significant risks identified SO4 Communication and training on anti-corruption policies and procedures SO5 Confirmed incidents of corruption and actions taken	State/Tendance	n2	p2	n2xp2
3. Public Policy	SO6 Total value of political contributions to political contributions by country and recipient/beneficiary.	State/Tendance	n3	p3	n3xp3
4. Anti-Competitive Behavior	SO7 Total number of legal actions for anticompetitive behavior, anti-trust, and monopoly practices and their outcomes.	State/Tendance	n4	p4	n4xp4
5. Compliance	SO8 Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with laws and regulations.	State/Tendance	n5	p5	n5xp5
6. Supplier assessment for impact on society	SO9 Percentage of new suppliers that were screened using criteria for impacts on society SO10 Significant actual and potential negative impacts on society in the supply chain and actions taken	State/Tendance	n6	p6	n6xp6
7. Grievance mechanism for impact on society	SO11 Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms	State/Tendance	n7	p7	n7xp7
DIAGNOSTIC OF SOCIETY	WEAK-STRONG	$SO = \sum_{i=1}^7 nixpi$			

4.2.2.4. Assessing a diagnostic model of the product responsibility

Product Responsibility Performance Indicators address the aspects of a reporting organization's products and services that directly affect customers, namely, health and safety, information and labeling, marketing, and privacy.

Product Responsibility Aspects are: *Customer Health and Safety; Product and Service Labeling; Marketing Communications; Customer Privacy; and Compliance.*

Table 90. SYNTHESIS A DIAGNOSIS OF PRODUCTS RESPONSIBILITY

Areas	Indicators/Observations	SWOT Diagnostic	Po i nts	Imp.	Scor es
1. Customer Health and Safety	PR1 Percentage of significant product and service categories for which health and safety impacts are assessed for improvement PR2 Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes.	State/ Tendence	n1	p1	n1xp1
2. Product and Service Labeling	PR3 Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirement PR4 Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes. PR5 Results of surveys measuring customer satisfaction	State/ Tendence	n2	p2	n2xp2
3. Marketing Communications	PR6 Sale of banned or disputed products PR7 Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes.	State/ Tendence	n3	p3	n3xp3
4. Customer Privacy	PR8 Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.	State/ Tendence	n4	p4	n4xp4
5. Compliance	PR9 Monetary value of significant fines for noncompliance with laws and regulations concerning the provision and use of products and services.	State/ Tendence	n5	p5	n5xp5
DIAGNOSTIC OF PRODUCT RESPOSIBILITY	WEAK-STRONG POINT	PR = $\sum_{i=1}^5 n_i x_{pi}$			

4.2.2.5. Synthesis the diagnostic model of the company's social performances

Finally, a global score for measuring the social performances of a company can be obtained by aid of the following formula:

$$S = p_{LA} * LA + p_{HR} * HR + p_{SO} * SO + p_{PR} * PR \text{ where,}$$

S- is the social performances score (the minimum value is 1, the maximum is 5);

LA- is the labor practice performance score determined above (the minimum value is 1, the maximum is 5);

HR- is the human rights performances score determined above (the minimum value is 1, the maximum is 5)

SO- is the society performances score determined above (the minimum value is 1, the maximum is 5);

PR- is the product responsibility score determined above (the minimum value is 1, the maximum is 5);

p_{LA} – is the weight of importance accorded to labor practice area;

p_{HR} – is the weight of importance accorded to human rights area ;

p_{SO} – is the weight of importance accorded to society area;

p_{PR} – is the weight of importance accorded to product responsibility area.

Example

An investor wants to invest in a Romanian company. For this purpose he is interested to find which are the companies with the highest environmental and social performances.

Solution

Romanian companies will adopt the sustainable reports in their activity only beginning with 2018. Until now, these statements were voluntary report and thus very few publicly companies report such kind of reports. In order to respond to the asking of assessing the social and environmental performances of the Romanian companies, the information voluntarily reported by the companies to Bucharest

Stock Exchange (BSE) under the Comply or Explain Statement, can be used as data source. In this statement, the companies listed on the BSE provides a lot of information on the extent to which they adopt the best corporate practices required by the BSE Code of Corporate Governance.

The Comply or Explain Statement contains a number of 51 questions of which 50 relate to corporate governance practices and the last one question refers to the development of activities which concern corporate social responsibility (Social and Environmental Responsibility).

This question is formulated in a simple way, respectively, if the company performs or not the corporate social responsibility activities. The answer of the companies can be YES or NO and if it is NO then EXPLAIN. In order to evaluate this field, 1 point can be given for if the company says YES to the question „the company performs social responsibility activities ?”, and 0 points for NO „the company it does not perform social responsibility activities”. The minimum ES (environmental and social) score can be obtained by a company is 0 points and the maximum is 1 point.

$$ES = YES/NO = \{min 0, max1\}$$

We conducted such type of study over 76 Romanian listed companies at BVB, for the period 2012. The results are systematized in the Annex 2. We found that 57 companies, representing 75% of the total listed companies have carried out social responsibility activities at the date of this study (2012).

4.3. Diagnosis of the corporate governance's performances

4.3.1. Conceptual approaches

The term corporate governance has emerged in common usage in the 70's, in the United States, in the middle of the Watergate scandal, when it was revealed that the U.S. companies were involved in the U.S. politics, by making contributions to various political parties. Later, at the end of the twentieth century, financial scandals like Xerox Guinness 1986, Poly Peck International 1989, Maxwell 1991, BCCI-1991, Enron-2001, Allied Irish Bank- 2002, WorldCom-2002, Xerox 2002, Merrill Lynch-2002, Parmalat-2003/2004, Andersen-2001/2002, have disrupted the financial world and raised serious issues of trust concerning corporate governance systems. Uncontrolled development of financial innovations, especially derivatives, contributed to the dematerialization of business operations and favored the creative accounting practices designed to manipulate those who analyze the financial statements (Le Roy and Marchesnay, 2005). *Stock-options* techniques and the managers' remuneration were based on performance, but the interests of directors and stakeholders could not be both satisfied, in addition these issues caused various complaints and losses for the minority shareholders, which did not belong to the leading board of directors (Mironiuc, 2009).

In the new framework for economic development, especially of the organization, the management organization approach is changing towards the *corporate governance mechanisms*. Effective corporate governance allows shareholders to ensure that companies in which they hold shares are managed in accordance to their own interests.

As for shareholders, they have economic benefits generated by the company, but very few benefits in controlling the company, except for some situations in which the company rules give them rights to vote. The relationship between

shareholders and managers is a contractually one, as one between principal and agent ("agent theory"). Shareholders hire managers to perform certain services in their names, a certain authority being given to the manager, fact that may lead to mistrust, as in any other contract. Beneficiaries (shareholders) may find that managers do not always act in their interest, hence the agency problems. These agency problems arise because of the impossibility of contracting every possible action of an agent whose decisions affect both his welfare and the welfare of the principal (Brennan,1995). Arising from this problem is the way to induce the agent to act in the best interests of the principal, assuring also transparency of its decision. The solution consists in the adoption of the best practice codes by any company which presents real interest in assimilating the rules of a global market.

Oxford English Dictionary (2008) defines "governance" as the act/ manner/ fact for management or stewardship. The term of "good governance" is first mentioned in 1932 by Adolf Berle and Gardiner Means in the agency theory that developed it, a theory which is today based on the management systems.

Tricker (1984), called by Cadbury as "the father of corporate governance", considers that the essential elements of good corporate governance are: *corporate strategy, executive management, responsibility and supervisory*. A well-known definition is that given by Shleifer and Vishny (1997) stating that corporate governance refers to the way in which the suppliers of company funds ensure that *they will just receive the benefits from the investments made*.

According to The Organization for Economic Cooperation and Development-OECD (2004), *corporate governance is the system by which companies are managed and controlled*. Analytically, it refers to how rights and responsibilities are shared between the categories of participants in business activities such as board of directors, managers, shareholders and other stakeholders while specifying how to adopt the business decisions policy for the company, how to define strategic objectives, which are the means of achieving them, and how to monitor financial performance. Hence, the concept is seen as having two facets such as: *the behavior face* (which refers to how managers, shareholders, employees, creditors,

customers and suppliers, state and other interest groups within the overall strategy of the company interact) and *the normative face* (which refers to the set of regulations falling within these relationships and behaviors described above - the companies' law, securities and capital markets law, insolvency law, competition law, stock exchange listing requirements and so on). (Wagner et al. 2005)

World Bank defines corporate governance as *a set of laws, rules, regulations and ethic codes voluntarily adopted by companies, allowing to attract the necessary of human resources and materials for its activity and also giving them the opportunity to conduct an efficient business designed to generate long-term value for shareholders, for another interest group and also for society as a whole.*

The evolution of corporate governance codes on the world economy

In the early '90s, in the U.S. there were several laws for the listed companies such as Sarbanes-Oxley, which contain detailed rules for an effective management of the companies. In recent decades, in a corporate governance area, the UK brought the greatest contribution to its development by developing reports and ethics codes.

The honor of drafting the first corporate governance code in 1992 belongs to **Sir Adrian Cadbury**, the chairman of Cadbury Company. The Cadbury Code was the foundation of London Stock Exchange Code and assessed the first basic rules in managing a company in order to achieve the increase in efficiency, while facing a nondiscriminatory behavior towards shareholders. Over time, all transnational companies have defined their own best practice codes, becoming more and more transparent to shareholders, largely because of the increase of their activism, but also because of being traded on the market stock exchange; they were interested in having the best market image for the investors.

In the European Union, the concept of corporate governance began to emerge more clearly after 1997, when most countries have adopted corporate governance codes, which were, however, optional. The impulse of adopting these codes have led to financial scandals related to the failure of British listed companies. On the

other hand, the Asian economic crisis in 1978 and the withdrawal of the investors from Asia and Russia, raised for the international business community the issues related to the consequences of the investors' distrust in the companies' management. All these crises have captured the attention of governments, supervisory authorities, companies, investors and even of the general public on the fragility of corporate governance arrangements and the need to reassessing the system.

Thus, in consequence to the Asian financial crisis, the Organization for Economic Cooperation and Development (OECD) and World Bank have jointly initiated a common dialogue in the corporate governance area and have organized roundtables, at regional levels, by adopting a strong partnership with national policy makers, regulators and market participants.

The OECD Principles of corporate management were developed in 1999 and are the only set of principles generally accepted in the world nowadays, being recognized as one of the 12 pillars of international financial stability. The OECD Principles of Corporate Governance provide specific guidance for policymakers, regulators and market participants in order to improve the legal, institutional and regulatory framework that underpins corporate governance, with a focus on publicly traded companies. They also provide practical suggestions for stock exchanges, investors, corporations and other parties that have a role in the process of developing good corporate governance. They have been endorsed as one of the Financial Stability Forum's 12 standard key essential for financial stability.

The Principles cover six key areas of corporate governance, as it follows (OECD,2005³):

I. Ensuring the basis for an effective corporate governance framework

The corporate governance framework should promote transparent and efficient markets, be consistent with the rule of law and clearly articulate the division of

³ Organisation for Economic Cooperation and Development, The OECD Principles of Corporate Governance, No. 216, Mayo-Agosto 2005

responsibilities among different supervisory, regulatory and enforcement authorities.

II. The rights of shareholders and key ownership functions

The corporate governance framework should protect and facilitate the exercise of shareholders' rights.

III. The equitable treatment of shareholders

The corporate governance framework should ensure equitable treatment of all shareholders, including minority and foreign shareholders. All shareholders should have the opportunity to obtain effective redress for the violation of their rights.

IV. The role of stakeholders in corporate governance

The corporate governance framework should recognize the rights of stakeholders established by law or by mutual agreements and encourage active co-operation between corporations and stakeholders in creating wealth, jobs, and the sustainability of financially sound enterprises.

V. Disclosure and transparency

The corporate governance framework should ensure timely and accurate disclosure on all material matters regarding the corporation, including the financial situation, performance, ownership, and governance of the company.

VI. The responsibilities of the board

The corporate governance framework should ensure the strategic guidance of the company, the board's effective monitoring of the management, and its accountability for the company and the shareholders. The Principles generally offer the governments a broad guidance to follow when reviewing whether their corporate governance framework is compatible when establishing the corporate governance they want. Policymakers are encouraged to develop the governance framework with an overall view on its impact on the economic performance, market integrity and the incentives it creates for market participants and the promotion of transparent and efficient markets. The Principles gave the governments from different countries the possibility of applying them as partially or integrally as they considered.

Although it is clear highlighted that no one wants to impose a universal model of corporate governance, on the long-term the trend is moving towards global standards.

Thus, depending on the countries' level of economic development, legislative progress, and property system, political and cultural particularities and not least of mentality, there are several ways of implementing the corporate governance principles, as follows:

- **Voluntary codes** of ethics and administration, adopted by security issuers whose securities are publicly traded;
- **Optional codes** of corporate governance / best practices developed by the regulatory bodies of the capital market or of the stock exchanges (as recommendations for companies);
- **Mandatory codes** imposed by stock exchanges, on the conditions for listing none of the categories of the grant;
- The inclusion of **specific provisions in the legislation**, which thus become mandatory for all companies.

Until nowadays, it can be identified approximately 180 worldwide codes, characterized by a high degree of convergence in terms of their content (Aguilera and Cuervo-Cazurra, 2004). Corporate governance is the concept that has influenced most of the developed or developing countries. For these reasons, the OECD has prepared a set of principles of corporate governance that attempts to complete tasks of the Board with pressing issues for arising democracies.

In conclusion, within the concept of corporate governance framework, transparency and disclosure issues are a main concern because they serve as a pillar for any decision-making process. For these reasons, financial and accounting information must achieve a certain quality and contribute to the efficiency of organizing the management and to increase its market value. The quality of the information contained in financial reports in all countries has increased from period to period as a result of internal and external pressures of international regulatory

organization, which are largely consistent with the OECD principles (Morariu et al, 2008).

Once the benefits of corporate governance practices are understood and adopted in developed countries, the emerging countries, besides modifying the transition to the market economy, tend to adopt “the best practices” in corporate governance.

4.3.2. Assessing a diagnostic model of the corporate governance's performances

In evaluating the performances of corporate governance system, the results of numerous studies enhance that the main component of corporate governance consists in *transparency and disclosure practices* Cromme, 2005; Karamanou and Vafeas 2005; Bhat et al., 2006; Aksu and Kosedag, 2006; Junarso, 2006; Ben Ali, 2008; Kuznecovs 2011; Desouki & Mousa, 2012; Ionascu and Olimid, 2012. It is also relevant that the international rating agencies (Standards & Poor's, Credit Lyonnais Securities Asia-CLSA, Vigeo Agency) pay particular attention to the practices of transparency and dissemination of information about the company, as an important component in order to develop a corporate governance score. Gompers et al., 2003 basing on a sample of 1500 US companies, constructed a CG Index by using 24 variables, as a tool for analysis the quality of corporate governance system. Larcker et al., 2007 on his survey consist in analysis of 2106 sample companies quoted in USA, between 2002-2003, constructed a corporate governance score by using 39 criteria including board characteristics, compensation characteristics, ownership, and capital structure characteristics.

In Croatia, Vitezic, 2006 analyzed the corporate governance of listed companies by using three corporate governance qualitative variables such as: environment of emerging economy, board attributes and disclose level. So, he no built a score of CG, only used some qualitative criteria. For Greece, Italya and Spain, basing on a sample of firms listed on the Athens, Milan and Madrid Stock

Exchanges, Bekiris and Doukakis, 2011 try to find some correlation between corporate governance and accrual earnings management. For this scope, first they build a Corporate Governance Index composed of 55 individual measures. More specifically, they categorized these measures in five dimensions of corporate governance, namely Board of Directors, Audit, Remuneration, Shareholder Rights and Transparency.

In Russia, Kuznecovs, 2011 analyzing the corporate governance on a sample of largest listed companies in Russia covering 80% of the Russian stock market over the period 1995-2007, he not constructed a corporate governance (CG) score but used only qualitative approach for this purpose. In Korea, Black et al. (2006), analysing the corporate governance of 515 Korean listed companies by using a self-constructed CG score. In Europe, Bistrova and Lace, 2012 on a sample consist in 118 companies quoted on Central and Eastern European stock exchanges, over the period 2007-2010, a CG score is constructed by using 39 criteria. In Italy, Gianpaolo and Poggesi, 2010 analyzed the corporate governance on Italian Listed Local Public Utilities (7 companies) over the period 2000–2008, by composing a CG rating. In Germany, Stiglbauer, 2010 analyzed the transparency and disclosure practices on 113 companies Frankfurt Stock Exchange, Germany by calculating a T&D score.

Other investigated studies in this area, in order to asses the corporate governance system quality, used some CG scores already calculated by different rating agencies, such as:

- a) Standard's and Poors Agency Black et al 2005 or Aksu and Kosedag, 2006 or Doidge, 2007;
- b) Credit Lyonnais Securities Asia- CLSA Klapper and Love, 2004 or Durney and Kim, 2005 or Doidge, 2007 or Shen and Chih 2007 or Yu, 2009 or Chen, Chen and Wai, 2009 or Hugill an Siegel, 2012;
- c) Institutional Shareholder Service- ISS Brown & Caylor, 2006; Brown and Caylor, 2006; Khanna et al., 2006; Doidge et al., 2007; Anderson and Gupta, 2008; Daines et al. 2008;

- d) Vigeo Agency Gawer, 2012;
- e) Government Reporting Initiative- GRI Hugill & Siegel, 2012;
- f) Deminor Rating Agency Bauer et. al , 2003; Matos and Serra, 2009; Renders et al., 2010; Hugill & Siegel, 2012;
- g) Aspekt –a private Czech data Klapper, 2006;
- h) Corporate Governance Association of Turkey Coskun and Sayilir, 2012.

Thus, data sources for assessing the corporate governance quality may be represented by *Comply or Explain Statement*, a report that listed companies voluntarily report. Any other information regards corporate governance can be collected from The Annual Reports. The importance of Annual Reports as public information is highlighted by various authors Lang and Lundholm, 1993; Botosan 1997; Knutson 1992; and also Standard & Poor's Agency. The information obtained from questionnaires sent to companies can be a good but hard to obtain source about corporate governance, even so this method is used by some authors such as Drobetz et al., 2004, Toudas and Karathanassis, 2007.

In our opinion, a very easy way to construct a corporate governance score consists in using the responses quoted in *Comply or Explain Statement*. For the companies listed on Bucharest Stock Exchange, we exemplify the construct of a corporate governance score.

Following the methodology used by Standard's & Poors, we proceed to reclassify the 50 questions contained by the "Comply or Explain Statement" into four main investigating areas such as governance structure, investors relations, board and management and financial disclosure. This way, the comparative information with those of other countries from European or any other international space are obtained.

The reclassified questions are presented as follows:

- i) Governance structure -G: 10 questions
- ii) Investor relations -I: 10 questions
- iii) Board and management -B: 20 questions
- iv) Financial disclosure - F: 10 questions

In table 91 is designed, the general structure of the component questions in "Comply or Explain Statement" reclassified in order to assess the corporate governance score. At each of the questions, the companies answer with YES/NO/If NO then EXPLAINS. For our reason, in order to assess a corporate governance score, we will give 1 point for each answer with YES and 0 points for NO, resulting the CG score as follow:

$$CG = \sum_{i=1}^{10} Gi + \sum_{i=1}^{10} Ii + \sum_{i=1}^{20} Bi + \sum_{j=1}^{10} Fi \quad \text{where,}$$

- CG is the corporate governance score for a company;
- Gi is the responses given to each questions referring to Governance structure area;
- Ii is the responses given to each questions referring to Investor relations area;
- Bi is the responses given to each questions referring to Board and management area;
- Fi is the responses given to each questions referring to Financial disclosure area.

The minimum governance score obtained by a company is 0 point and the maximum is 50 points. This score of corporate governance which we proposed can be used for measure the quality of corporate governance for the Romanian companies.

Example 1

An investor wants to invest in Anaconda company. After analyzing the financial data, he is also interested in finding some characteristics of governance system (if the board and management have experience in the corporate' lead, their specialized studies in the field, age, theirs independence, equilibrium between the executive and non-executive board members, transparency, the protection of minority investors, the quality of the investor communication system and the effectiveness of executive remuneration policies etc.).

Solution

For the purpose of measuring the quality of corporate governance for Anaconda Company we use the information presented in Comply or Explain Statement for

the last year of reporting 2016, data which are systematized in the table 91. We may find that Anaconda Company has general score of corporate governance of 29 points of a maximum of 50 points, which reflects a percent of 58% of adopting the best practices in corporate governance.

As regards *governance structure*, the partial score is 6 points (of maximum 10 points), corresponding a percent of 60% of adopting the best corporate practices in this area. The main weakness are reflected by lacking its own corporate Governance code which describes the main the main structures of the company's governance.

Regarding *investors relations*, the company Anaconda adopts 90% of best practices this area. One can found a good fair treatment of the shareholders, the publish ofdetails about the General Shareholders Meeting. One weakness regards investrор relations is found, refering to appoint a person/department specialized in investors' relations.

As regards *board and management*, Anaconda Company adopts a percent of 55 % of best corporate practices (11 of 20 points). The main weakness refers to the folowing aspects: the using unitary system of governance (but in Romania, majority of the companies adopt a unitary system in governance); the board of directors doesn't meet at least once a trimester for the monitoring and the activity of the company; the board doesn't use the support of some consultative committees to examine a specific topic, such as Nomination Committee or Remuneration; the Board doesn't adopted a procedure in order to identify and solve adequately the situations where there are conflicts of interest.

Regarding *financial disclosure*, Anaconda company accomplishes only 3 of 10 requirements of best practices, meaning only a percent of 30% of adopting them. The main shortage reffer to dissemination the financial reports in English language; a parralel disamnniation of reporting acording with IFRS; and lacking the Audit committe (which are ment to improve the accountability and transparency of financial information by its assistant role).

Table 91. Comply or Explain Statement for Anaconda Company (year 2016)

	Questions from Comply or Explain Statement	Answer Yes/No	Points
I	Attributes showing Governance structure (G):		6 of 10
1.	Has the issued drawn up the By-laws/Corporate Governance Regulations to describe the main aspects of the corporate governance? (P1-R1)	No	0
2.	The By-laws/Corporate Governance Regulations are posted on the company website, indicating the date of the last update? (P1-R1)	No	0
3.	In The By-laws/Corporate Governance Regulations are there defined the corporate governance structures, positions, components and responsibilities of the Board of Directors (BD) and of the executive management? (P1-R2)	No	0
4.	Does the issuer's Annual report provide for a chapter on corporate governance where they describe all the relevant events related to the corporate governance, recorded during the previous financial exercise? (P1-R3)	No	0
5.	Does the issuer circulate on the company website the information related to the following aspects of their corporate governance policy: a) a description of their corporate governance structures? (P1-R3)	Yes	1
6.	b) the updated articles of incorporation? (P1-R3)	Yes	1
7.	c) the operation bylaws/essential aspects for each specialty? (P1-R3)	Yes	1
8.	d) the "Comply or explain" Statement? (P1-R3)	Yes	1
9.	e) the list of the BD members mentioning which members are independent and/or nonexecutive, of the members of the executive management and those of the specialty commissions/committees? (P1-R3)	Yes	1
10.	f) a brief description of the CV for each BD member of the executive management? P1-R3)	Yes	1
II.	Attributes showing Investor relations (I)		9 of 10
1.	Does the issuer abide by the rights of the financial instrument holders, providing them with the equal treatment and submitting to the approval any modification of the rights in the special meetings of these holders? (P2)	Yes	1
2.	Does the issuer publish in a spate part of the website the details of the General Meetings of Shareholders (GMS): a) GMS summons? (P3-R4)	Yes	1
3.	b) materials/documents corresponding to the agenda as well as any information on the agenda? (P3-R4)	Yes	1
4.	c) special power of attorney forms? (P3-R4)	Yes	1
5.	Has the drawn and proposed to GMS the procedures for the efficient and proper development of the GMS agenda without any damage to the right of any shareholder to express their free opinion on the debated topics? (P3-R6)	Yes	1
6.	Does the issuer publish in a spate part of the website the details of the shareholders' rights as well as the regulations for the attendance at GMS? (P3-R8)	Yes	1
7.	Does the issuer provide the information in due time (immediately)	Yes	1

	after the GMS) of all the shareholders through the separate section on their website: a) on the decisions made within GMS? (P3-R8)		
8.	b) on the detailed result of the vote? (P3-R8)	Yes	1
9.	Do the issuers circulate through the special section of the website, that is easily identifiable and accessible: a) current/communicated reports? (P3-R8)	Yes	1
10	Is there within the issuer's company a special department/person dedicated to the relation with the investors? (P3-R9)	No	0
III	Attributes showing Board and management (B):-total		11 of 20
1.	Is the issuer managed under a dualist system? (P19)	No	0
2.	Does the BD meet at least once a trimester for the monitoring and the activity of the issuer? (P4,P5-R10)	No	0
3.	Does the issuer have a set of rules referring to the reporting conduct and obligations of the transactions of the shares or other financial instruments issued by the company ("company assets") made on their name by the directors and other persons? (P4,P5-R12)	Yes	1
4.	If a BD member or a member of the executive management or any other person made on their interest a transaction with the company deeds, then, the transaction is circulated through the company website, according to the corresponding Regulations? (P4,P5-R12)	Yes	1
5.	Does the structure of the Board of Directors of the Issuer provide a balance between the executive and nonexecutive members (and especially independent nonexecutive directors) so that no person or group of persons may dominate the BD decision-making process of BD? (P6)	Yes	1
6.	Does the structure of the Board of Directors provide a sufficient number of independent members? (P7)	Yes	1
7.	During their activity, does BD have the support of consultative commissions/committees for the examination of specific topics, chosen by BD for their counseling on these themes? (P8-R15)	No	0
8.	Do the consultative commissions/committees forward activity reports to the BD on their specific themes? (P8-R15)	Yes	1
9.	For the assessment of the independence of their nonexecutive members, does the Board of Directors use the assessment criteria listed in the Recommendation 16? (P8-R16)	Yes	1
10.	Do the BD members permanently improve their knowledge through training/formation in corporate governance? (P8-R17)	Yes	1
11.	Does the selection of the BD members have a procedure based on transparency (objective criteria regarding the personal/professional qualification etc.)? (P9)	Yes	1
12.	Is there an Appointment Committee within the company? (P10)	No	0
13.	Does the Board of Directors analyze at least once a year the need to register a remuneration policy committee for the directors and members of the executive management? (P11-R21)	No	0
14.	Has the remuneration policy been approved by the GMS? (P11-R21)	No	0
15.	Is there a Remuneration Committee made exclusively of nonexecutive directors? (P11-R22)	No	0
16.	Is the company remuneration policy of the company provided in the	No	0

	Bylaws/ /Corporate Governance Regulations? (P11-R24)		
17.	Has the BD passed a procedure with the view to identifying and settling adequately the conflicts of interests? (P14)	Yes	1
18.	Do the directors inform BD on the conflicts of interests as they occur and do they refrain from the debates and the vote on those matters, according to the legal provisions? (P15-R33)	Yes	1
19.	Has the BD passed the specific procedures in order to provide their procedure accuracy (identification criteria of the significant transactions, relevant for transparency, objectivity, non-concurrence, etc.) for defining the transactions? (P16-R34,R35)	Yes	1
20.	Has BD passed a procedure of the internal circuit and the disclosure to third parties of the documents and information referring to the issued, with emphasis on the information that can influence the price of the assets issued by them? (P17-R36)	No	0

IV	Attributes that show Financial disclosure (F):		3 of 10
1.	Do the issuers circulate through the special section of the website, that is easily identifiable and accessible: b) the financial schedule, the annual reports, the quarter and semester reports? (P3-R8)	Yes	1
2.	Does the issuer circulate, in the English language, the information representing the subject of the reporting requirements: a) periodic information (providing information periodically)? (P12,P13-R25)	No	0
3.	b) continuous information (providing information periodically)? (P12,P13-R25)	Yes	1
4.	Does the Issuer provide and circulate the financial report according to IFRS? (P12,P13-R25)	No	0
5.	Does the issuer promote, at least once a year, meetings with the financial analysts, brokers, rating agents and other market specialists with the view to presenting the financial elements relevant to the investment decision? (P12,P13-R26)	Yes	1
6.	Is there an Audit Committee within the company? (P12,P13-R27)	No	0
7.	Does the BD of the Audit Committee, as the case may be, examine on regular basis, the efficiency of the financial report, the internal control and the control of the risk management system passed by the company? (P12,P13-R28)	No	0
8.	Is the Audit Committee made of nonexecutive directors and is there a sufficient number of independent directors? (P12,P13-R29)	No	0
9.	Does the Audit committee meet at least twice a year; are these meetings dedicated to drawing up and circulating the quarter and annual results to the shareholders? (P12,P13-R30)	No	0
10.	Does the Audit Committee recommend to BD the selection, appointment re-appointment and replacement of the financial auditor, as well as the terms and conditions of their remuneration? (P12,P13-R32)	No	0
Total		29 of 50	

Example 2

An investor wants to invest in a Romanian company. For this purpose he is interested to find which are the companies with the highest corporate governance score.

Solution

As data source, the Comply or Explain Statement is used, for the public companies, at the end of December 2012. Following the methodology presented before, the results are presented in Annex 2. The final sample consist in 76 listed companies.

The results reflect an average score of corporate governance for the Romanian companies of 29.01 points. It means that the companies listed at Bucharest Stock Exchange adopt good practice corporate governance codes and principles in a average percentage of about 58 % of the total principle number. This means that, on average, 58% of the questions were answered with YES and 42% with NO.

On average the corporate governance principles connected to *governance structure, board and management and financial transparency* are generally half adopted: *governance structure* (52%), *board and management* (51.2 %), *financial disclosure* (50.5%). The highest percentage of aligning to the Corporate Governance principles are registered at the category *Investors relations* (86.4 %).

4.4. Aggregation the performance dimensions. Assesing a global FESG score

In the research literature, various approach regarding the way of aggregation different categories of financial and/or non-financial performances are found. Chen (2010) identified two main types of aggregation methodologies in the literature. The first type asses equal weight to all categories (community relationships, environmental performance, human rights etc.), based on the assumption that all criteria are of the same or at least similar importance. However, Bird et al. (2007) supposes that this assumption is not valid in most of the cases.

The second methodology uses different weights to the specific corporate social performance categories. In the study of Ruf (1998) *the product/liability* issues are found to have the highest importance (highest weight of 23%), followed by *employee relations* (18%), *women/minority* (15%), environmental (14%), and community relations (12%). Following a similar methodology, Waddock and Graves (1997) found that *Employee relations* were found to be the most important category (17%), followed by *product/liability* issues (15%) and *community relations* (15%), and then the *environment* (14%).

Opposite, Delquié (1997) argues that the weights and aggregate scores assigned for the social and environmental performances could lose their applicability and comparability.

We consider that, while the reports of sustainable statements will be made more and more in the future, also the available data will be more pronounce and thus, a diagnosis of ESG type of performances could be much more assessed.

Meanwhile, we propose calculating a global FESG score of diagnosis the business which, synthetically is obtained, by passing the following steps:

a) For the **Economic/Financial performances**, the **financial rating** is determined according to the formula:

$$F = \sum_{i=1}^n p_i x N_i \text{ where,}$$

- p_i – the weight of importance given to each economic-financial indicators;
- N_i – represents the points collected by each of the economic-financial indicator “ i ”, depending on the position of indicator in relation to the sector average.

Among the financial/economic indicators we may select the more important ratios as followings: Current liquidity ratio (Current assets on Current liabilities); Debt ratio (Total Debts/ Equity); Profit margin ratio (Net profit on Sales); Net working capital on total assets; Return on equity; Return on assets; Cash-flow on total assets. Or, we can proceed to an analytical diagnostic of financial state, as we described in the chapter 3 of this book.

b) For **non-financial performances**, expressed as environmental, social and corporate governance performances, we may determine the **ESG score (Environmental, Social, Governance)**, as follows:

$$\text{ESG} = p1 * E + p2 * S + p3 * G \text{ , where}$$

- $p1, p2, p3$ represents the important ratios given to the variables: environmental, social and corporate governance performances; These could be statistically or deterministic determined. Based on investigated literature, we found that each of the three indicators is very important so we propose using a balance between the these three areas of performances So, we propose to give the equal important ratios to each of Environmental, Social and Governance indicators.
- E represents the score given to the company for environmental performances; In creating a model of environmental assessment scales performance, we relied on sustainable GRI reporting system, which is the most widely used sustainability reporting framework. According with the latest generation of GRI Guidelines (GRI 4 Guidelines, 2013), the *environmental performances* indicators are in number of 34 and are grouped in twelve area, as follows *Materials; Energy; Water; Biodiversity; Emissions, Effluents and waste; Products and services; Compliance; Transportation; Overall; Supplier environmental assessment; Environmental grievance mechanisms* (see chapter 4.1. of this book)
- S represents the score given to the company for social performances; Based on GRI 4 Guidelines (2013) the *social performances* indicators are grouped in *Labor practices; Human rights; Society; Product responsibility* (see chapter 4.2. of this book).
- G represents the score given to the corporate governance performances (see chapter 4.3. of this book)

c) Finally, the **global rating** of the business performances is determined by aggregating the financial with the non-financial performances, as follows:

$$\text{FESG} = P1 * F + P2 * ESG \text{, where}$$

- FESG represents the final score (the final rating) of the business performances that includes both financial and non-financial aspects (that are represented by environmental, social and corporate governance performances);
- $P1, P2$ represents the ratio given to the financial (F) and non-financial (ESG) performances. Based on investigated literature we will give fifty/fifty percent for each of two main area of performances (financial and non-financial one). Of course, this approach can be discussed.

The final FESG score reflects different values on a scale from 1 to 5 that will classify the companies in one of the global rating classes, as we presented in the table below:

Table 92. Interpreting the final FESG score

Rating	Scoring	Analytical classification	General classification
AAA	FESG≈5	Forte state, the bankruptcy risk is extremely low.	In this case, the business functions very well, the economic and financial state represent a STRENGTH for the company. The development potential is very high. The position on the company's life cycle curve is: development-maturity. The bankruptcy risk is very low.
AA	4,5 ≤ FESG < 5	Very good to forte state, the Bankruptcy risk is very low.	
A	4 < FESG < 4,5	Good to very good state, the bankruptcy risk is very low.	
BBB	FESG≈4	Good state, the bankruptcy risk is low.	
BB	3,5 ≤ FESG < 4	Satisfactory to good state, the bankruptcy risk is low.	
B	3 < FESG < 3,5	Satisfactory state, the bankruptcy risk is medium.	
CCC	FESG≈3	Satisfactory state, the bankruptcy risk is medium.	
CC	2,5 ≤ FESG < 3	Unsatisfactory to satisfactory state, the bankruptcy risk is high.	
C	2 < FESG < 2,5	Unsatisfactory state, the bankruptcy risk is high.	
DDD	FESG≈2	Weak state, the bankruptcy risk is high	
DD	1,5 ≤ FESG < 2	Very weak to weak state, the bankruptcy risk is very high	
D	1 < FESG < 1,5	Critical to very weak state, the bankruptcy risk is very high	
D-	FESG≈1	Critical state, the bankruptcy risk is imminent	

Source: own processing

Bibliography

- Abdullah N.A., Halim A. (2008), Ahmad H. Predicting Corporate Failure of Malaysia Listed Companies: Comparing Multiple Discriminant Analysis, Logistic Regression and the Hazard Model, *International Research Journal of Finance and Economics*, Issue 15 2008, pp.202-217;
- Abdullah H., Valentine N. (2009), Fundamental and Ethics Theories of Corporate Governance, *EuroJournals Publishing*, Inc. 2009, Issue 4, pp.88-96;
- Achim M.V., Borlea N.S. (2015). Developing of ESG score to asses the non-financial performances in Romanian companies, Scopus, ScienceDirect, *Procedia Economics and Finance* 32, pp. 1209–1224;
- Achim M.V., Borlea N.S. (2014), Environmental performances – way to boost up financial performances of companies, *Environmental Engineering and Management Journal*, Volume 13, Issue 4, pp. 1003-10016;
- Achim, M.V., Borlea N.S. (2013), *Corporate Governance and Business Performances. Modern approaches in the new economy*, LAP LAMBERT Academic Publishing, Germany;
- Achim M.V., Mare C., Borlea N.S. (2012), A statistical model of financial risk bankruptcy applied for Romanian manufacturing industry, *Procedia Economics and Finance of conference Emerging Markets Queries in Finance and Business, EMQFB*, Târgu Mureş, 24-27 October 2012, Vol.3, pp. 132–137 ;
- Achim M.V., Borlea S.N. (2012), Consideration on business risk of bankruptcy, *Revista de Studii și Cercetări Economice "Virgil Madgearu"*, no. 2, pp.5-31;
- Achim M.V., Pintea M.O., Borlea S.N. (2011), Social and Environmental Performance-New Dimension of Performance in the Context of Sustainable Development, *Ovidius University Annals, Economic Sciences Series* Vol. 11, No. 1, pp. 7-12 ;

- Adams M.B. (1994), Agency theory and the internal audit, *Managerial Auditing Journal*, 1994, 9 (8), pp. 8-12;
- Al-Hussain A., Johnson R. L. (2009), Relationship between Corporate Governance Efficiency and Saudi Banks' Performance, *The Business Review*, Cambridge. Hollywood: Dec 2009. Vol. 14, pg. 111-118;
- Agrawal A., Knoeber C. R. (2012), Corporate Governance and Firm Performance, Chapter 26 in Thomas, Christopher R. and William F. Shughart II, eds., *Oxford Handbook in Managerial Economics*, Oxford University Press, New York, NY;
- Austin D., Alberini A., Videras J., (1999), *Is there a link between a firm's Environmental and Financial Performance?*, Paper presented at NBER Summer Institute Public Economics Workshop: Public Policy and the Environment, Cambridge, MA, August 2, 1999;
- Baret P., (2005), *Evaluation de la Performance Globale des Entreprises: Quind d'une approche economique?*, Colloque ADERSE, IAE Lyon, 18-19 Novembre 2005 ;
- Aksu M., Kosedag A. (2006), Transparency and Disclosure Scores and their Determinants in the Istanbul Stock Exchange, Corporate Governance: An International Review, Vol. 14, No. 4, pp. 277-296 ;
- Adams R. B., Hermalin, B. E., Weisbach, M. S. (2010), The Role of Boards of Directors in Corporate Governance: A Conceptual Framework & Survey, *Journal of Economic Literature*, no. 48, pp. 58-107 ;
- Aguilera R., Cuervo-Cazurra A. (2004), Codes of good governance world-wide: what is the trigger?, *Organization Studies*, 25 (3);
- Anghel I. (2002), *Failure. Radiography and prediction*, Publishing House Economica, Bucuresti, 2002;
- Arcot S., Bruno V. (2011), Silence is not Golden: Corporate Governance Standards, Transparency, and Performance, Working Paper;
- Armeanu S.D., Vintilă G. , Moscalu M., Using quantitative data analysis techniques for predicting the risk of bankruptcy of the corporation, *Economie teoretică și aplicată* Volumul XIX (2012), No. 1(566), pp. 86-102;

- Bellovary J., Giacomino, D., Akers, M., A Review of Bankruptcy Prediction Studies: 1930 to Present , *Journal of Financial Education*, Volume 33 (Winter 2007);
- Bătrâncea I., Bătrâncea L.M., Borlea N.S.(2008), Financial Analysis of the economic entity, Publishing House, Risoprint, Cluj-Napoca, 2008;
- Bătrâncea I., Bătrâncea L.M.,Moscovicov A.,Popa A., Bătrâncea M.,Nichita A.(2010) Financial standing, Risoprint Publishing House, Cluj-Napoca, 2010;
- Black B., Hasung J., Woochan K. (2006), *Does Corporate Governance Affect Firms' Market Values? Evidence from Korea*, *Journal of Law, Economics and Organization*, Vol. 22, 2006, pp. 366-413;
- Bird, R., A. D. Hall, F. Momente, F. Reggiani (2007), What corporate social responsibility activities are valued by the market? *Journal of Business Ethics* 76(2), 189-206.
- Borlea Nicolae Sorin, Achim Monica Violeta (2014), Diagnosis of business and predictive models of bankruptcy risk- a model design, *Studia Universitatis Vasile Goldis, Economic Series*, Vol. 24 Issue 1/2014, pp.16-124
- Borlea S.N., Achim M.V., Breban L. (2013), Theoretical and practical approaches regarding the adoption of corporate governance codes, *Studia Universitatis "Vasile Goldiș" Arad Economics Series*, Vol 23 Issue 3 /2013, pp. 30- 41 ;
- Borlea S.N. (2009), *Economic and financial analysis and audit of financial and banking institutions in Romania*, Publishing House Risoprint, Cluj-Napoca, 2009;
- Borlea S.N., Achim M.V. (2010), Business performances in the context of a sustainable economy, *Journal of International Management Studies*, Vol 10 , No. 2010 , pp.112-120 ;
- Brealey R, Myers S., Allen F. (2006), Corporate Finance, Published by McGraw Hill, New York;
- Chen C-M., Delmas M. (2010), Measuring Corporate Social Performance: An Efficiency Perspective, *Production and operation management*,
DOI: 10.1111/j.1937-5956.2010.01202.x;

- Chen K. H., Thomas A Shimerda (1981), An Empirical Analysis of Useful Financial Ratios, *Financial Management*, Spring 1981, vol. 10(1), 1981, pp.51-60;
- Colasse B. (1994), Le Gestion Financiare de L'entreprise, PUF, Paris;
- Delquié, P. (1997). Bi-matching: A new preference assessment method to reduce compatibility effects. *Management Science* 43, 640–658.
- Desoky A.M., Mousa, G. A. (2012), Corporate Governance Practices: Transparency and Disclosure - Evidence from the Egyptian Exchange, *Journal of Accounting, Finance and Economics* , Vol. 2. No. 1, pp. 49 – 72;
- Dodge C., Karolyi, G.A., Stulz R.M (2007). Why do countries matter so much for corporate governance? *Journal of Financial Economics* 86, pp. 1–39;
- Drucker P. (2001), The next Society, *The Economist*, Nov. 1st.; Drucker P., *Post-Capitalist Society*, Publishinh House Image Bucharest;
- Eisenhardt, K.M. (1989), Agency Theory:An Assessment and Review, *The Academy of Management Review*, vol 14, No. 1 (Jan. 1989), pp.57-74;
- Elkington, J. (1997), Cannibals with Forks: The Triple Bottom Line of 21st Century Business, Capstone Publishing, Oxford;
- Filbeck G, Gorman R. (2004), The relationship between the Environmental and Financial Performance of Public Utilities, *Environmental and Resource Economics*, no. 29, 2004., pp. 137-154 ;
- Freeman R. E., Reed, D.L. (1983), *Stockholders and Stakeholders: A New Perspective on Corporate Governance*, *California Management Review*, 25 (3), 1983;
- Freeman R.E. (1984), *Strategic Management: A stakeholder approach*, Pitman, Boston, M.A.;
- Gompers P., Ishii, J. and Metrick A. (2003), Corporate governance and equity prices. *Quarterly Journal of Economics*, vol.118 issue 1;
- Helfert, E.A. (2006), Techniques of financial analysis, BMT Publishing House, Bucharest ;

- Kaplan R. S., Norton, D. P. (1996), *The Balanced Scorecard*, Boston: Harverd University Press, 1996;
- Kolk A., Pinkse J.(2009), The integration of corporate governance in corporate social responsibility disclosure, *Corporate Social Responsibility and Environmental Management*, vol. 17, Issue 1, pp. 15–26.
- Kotler P., Armstrong G., *Marketing principles*, Publisher Teora, Bucuresti, 1998;
- Kuznecovs M., Pal S. (2011), Does corporate governance reform necessarily boost firm performance? : recent evidence from Russia , Working Paper No. 11-06, Centre for Economic Development & Institutions Brunel University West London, 2011., <http://cedi.org.uk> ;
- La Porta, R., Lopez-de-Silanes F., Shleifer A., Vishny, R. (1998), Legal determinants of external finance, *Journal of Finance*, Vol. 52, No. 3, 1997, pp.1131–1150 ;
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R. (1998), Law and finance, *Journal of Political Economy*, Vol. 106, No. 6, 1998., pp.1113–1155 ;
- Lan L., Heracleous L. (2010), Rethinking agency theory: The view from law, *Academy of Management Review*, Vol. 35, No. 2, 2010, 294–314;
- Le Roy F., Marchesnay M. (2005), *La responsabilité sociale de l'entreprise*, Éditions EMS, Paris, 2005. ;
- Learnmount S. (2002), *Corporate Governance: What can be learned from Japan?*, Oxford University Press England, 2002;
- Lykke M., Pedersen K.J., Vinther H.M. (2004), A Failure-Rate Model for the Danish Corporate Sector, *Danmarks National Bank, working paper*, 2004;
- Lussier R. (1995), A nonfinancial Bussines Failure Prediction Model for Young Firmes”, *Journal of Small Bussines Management*, 1995 ;
- Jensen M.C., Meckling, H. W. (1976), Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics*, vol. 3, nr. 4, 1976;
- Junarso T. (2006), *Comprehensive Approach to Corporate Governance*, Lincoln/NE, Universe, 2006;

- Macmillan and Tampoe (2001), *The Strategy Formulation Process, Strategic Assessment Analysis of the external environment*, www.oup.com/uk;
- Maier S. (2005), *How Global is Good Governance? Ethical Investment Research Services*, http://www.eiris.org/publications_request.html;
- Mandru, L. et al. (2010), The Diagnosis of Bankruptcy Risk Using Score Function, in proceeding of the WSEAS Conference Recent Advances in Artificial Intelligence, Knowledge, Engineering and Database;
- Mimick R., Thomson M., Smith W. (2005), *Business Diagnostics: Evaluate and Grow Your Business, UK Edition*, Trafford Publishing, Canada.
- Mironiuc M. (2009), Financial Analysis versus extra-financial analysis in sustainable business performance measurement, Supliment of *Theoretical and applied economics Revue*, Bucharest. 29-31 mai, 2009, pp. 151-167;
- Niculescu M, *Global-strategic diagnosis*, Ed. Economica, 1998;
- Ohlson J. A. (2003), Financial Ratios and the Probabilistic Prediction of Bankruptcy, *Journal of Accounting Research*, vol. 18, no. 1, 1980;
- Pérez R., *La gouvernance de l'entreprise*, Éditions La Découverte, Paris ;
- Pantea I.M. (2008), *Strategic analysis – support for investment decisions*, Mirton Publishing House, Timișoara, 2003;
- Pesqueux Y. (2002), Organisations: modeles et representations, Presses Universitaires de France, Collection Gestion, Paris, 2002 ;
- Phillips R., Freeman R. E., Wicks A. (2003), What stakeholder theory is not, in *Business Ethics Quarterly*, 2003, 13(4), pp. 479–502;
- Platt H. D., Platt M. B. (1991), A note on the use of industry-relative ratios in bankruptcy prediction, *Journal of Banking and Finance*, vol. 15, 1991 , pp. 1183-1194;
- Ping Z., Cheng W.W. (2011), Corporate Governance: A Summary Review on Different Theory Approaches, *International Research Journal of Finance and Economics*, 2011, Issue 68;
- Pintea M. (2011), *Perfomance of economic entities in the context of sustainable development*, Publishing House Risoprint , Cluj-Napoca;

- Petrescu S. (2012), *Economic and financial valuation of business*, Tehnpress Publishing House, Iasi;
- Porter ME, Kramer MR., (2006), Strategy and Society: the link between competitive advantage and corporate social responsibility, *Harvard Business Review*, 84, pp. 78–92 ;
- Robu, M-A., Mironiuc M., Robu I-B (2012), A practical model for testing the hypothesis of "going-concern" for Romanian listed companies, *Financial Audit Journal*, , no. 2/2012, pp. 13-25 ;
- Ruf Bernadette M (1998), The development of a systematic, aggregate measure of corporate social performance, *Journal of Management* 24(1), pp. 119-133.
- Sarchizian S. (2010), The Importance of Corporate Governance Codes in European Union Countries, *Annals of Ovidius University*, Economic Series, pp. 697-701 ;
- Saxena S. (2009), Role of Corporate Governance In Corporate Performance A Simple Correlation Analysis;
- Siminica M. (2008), *Financial diagnostic of the firm*, Universitaria Publishing House, Craiova ;
- Siminica M, Circiumaru D., Murarita I.(2004), Considerations regarding discriminant analysis, Revista Tinerilor Economisti, Anul II~Nr.2 , April 2004, pp.81-86 ;
- Smith A. (1976), *An Inquiry into the Nature and Causes of the Wealth of Nations*, 1776, republished in 1976, University of Chicago Press;
- Shahbaz, M., Mutușcu, M., Azim, P., 2013, Environmental Kuznets curve in Romania and the role of energy consumption, *Renewable and Sustainable Energy Reviews*, 18, 165-173
- Shleifer A., Vishny R. W. (1997), A Survey of Corporate Governance, *The Journal of Finance*, no. 52;
- Stancu I. (2007), *Finance- fourth edition*, Economica Publishing House, Bucharest;

Stiglbauer M (2010), Transparency & disclosure on corporate governance as a key factor of companies' success: a simultaneous equations analysis for Germany, *Problems and Perspectives in Management*, Volume 8, Issue 1, 2010 ;

Vitezić N. (2006), Corporate governance in emerging economy and their impact on enterprise performance: A Case of Croatia , *The 4th International Conference on Accounting and Finance in Transition* (ICAF 2006) - Adelaide, UniSA, April 2006 ;

Walton P., Haller A. (2003), Raffournier B. *International accounting*, second edition, 2003, Publishing House Thomson, London;

Online references:

1. Coface Company, www.coface.com/
2. Dun and Bradstreet Company, www.dnb.com
3. Government Reporting Initiative, www.gri.com
4. Ranking methodology for Major Companies in Romania Developed by Ernst & Young Romania and Doing Business, 2012 on www.doingbusiness.ro
5. Romanian Chamber of Commerce and Industry, <http://www.ccir.ro>
6. Romanian National Bank , www.bnro.ro
7. Standard and Poor's, <http://www.standardandpoors.com>
8. Study on Monitoring and Enforcement Practices in Corporate Governance in the Member States, 23.09.2009, www.ec.europa.eu

Annex 1 Sectoral average indicators database⁴

Anexx 1.1. Turnover & others

Industry Name	Sales/ Total assets	Sales/ Inventory	Sales/ Account receivables	Sales/ Account Payable	Sales/ Non-cash working capital	Sales/ Sharehol der equity	Book Debt to Capital	Fixed Assets/ Total Assets	Book Debt to Capital
Advertising	1.68	25.76	3.06	4.91	6.23	1.75	17.78%	2.01%	17.78%
Aerospace/Defense	1.12	1.80	2.94	3.16	2.37	1.71	42.11%	16.82%	42.11%
Air Transport	0.74	46.26	16.34	11.08	-9.36	2.04	59.07%	35.09%	59.07%
Apparel	1.39	4.83	6.89	8.96	4.33	1.91	37.29%	13.55%	37.29%
Auto & Truck	1.68	10.26	8.98	5.74	-37.81	2.28	34.25%	12.89%	34.25%
Auto Parts	1.68	8.97	5.51	6.37	10.43	2.20	26.66%	26.40%	26.66%
Bank (Money Center)	0.23	94.80	125483.81	-	-	0.40	57.92%	0.26%	57.92%
Banks (Regional)	0.26	183.99	-	-	-	0.45	69.34%	0.61%	69.34%
Beverage (Alcoholic)	1.29	3.90	8.40	8.17	6.60	0.96	13.06%	20.91%	13.06%
Beverage (Soft)	1.46	12.71	11.43	10.29	28.95	1.42	29.66%	52.22%	29.66%
Broadcasting	0.88	16.09	4.34	10.66	7.19	0.91	27.37%	20.90%	27.37%
Brokerage & Investment Banking	0.35	65.04	1.03	0.60	-5.94	0.72	68.37%	0.53%	68.37%
Building Materials	0.98	4.96	3.95	6.52	3.62	1.33	34.33%	26.55%	34.33%
Business & Consumer Services	1.84	6.16	2.96	5.05	3.42	2.02	36.88%	6.71%	36.88%
Cable TV	0.88	16.71	6.80	6.86	10.92	1.00	28.41%	5.80%	28.41%
Chemical (Basic)	0.95	7.48	6.69	8.66	9.77	1.45	35.78%	27.71%	35.78%
Chemical (Diversified)	1.29	5.57	7.14	7.69	7.45	1.98	40.02%	29.05%	40.02%
Chemical (Specialty)	1.05	6.25	7.24	6.25	7.58	1.76	44.97%	9.80%	44.97%
Coal & Related Energy	0.64	11.14	4.59	4.67	80.95	0.91	41.68%	24.15%	41.68%
Computer Services	2.72	9.46	4.96	10.25	5.19	2.92	26.43%	10.97%	26.43%
Computers/Peripherals	1.88	7.86	6.49	7.73	15.20	2.25	20.49%	23.44%	20.49%

⁴ Processing on Damodaran database available for emerging countries at the address: <http://pages.stern.nyu.edu/~adamodar/>

Construction Supplies	0.94	4.22	3.16	4.12	6.32	1.45	43.77%	14.69%	43.77%
Diversified	0.93	4.89	5.87	6.81	-2.49	1.47	41.47%	9.35%	41.47%
Drugs (Biotechnology)	0.56	4.25	3.48	10.30	2.52	0.70	14.16%	10.49%	14.16%
Drugs (Pharmaceutical)	1.01	3.87	3.86	6.95	3.00	1.20	25.90%	7.27%	25.90%
Education	0.80	24.86	4.10	15.28	6.16	0.57	27.18%	9.87%	27.18%
Electrical Equipment	1.38	4.19	2.58	3.61	3.51	1.86	34.84%	10.29%	34.84%
Electronics (Consumer & Office)	1.99	8.37	5.12	6.07	10.32	3.85	42.23%	21.08%	42.23%
Electronics (General)	1.81	7.45	5.06	5.94	7.75	2.29	27.58%	39.87%	27.58%
Engineering/Construction	1.86	2.83	3.88	3.25	6.28	3.67	54.19%	2.87%	54.19%
Entertainment	0.81	5.56	3.89	8.51	3.20	0.90	18.17%	8.59%	18.17%
Environmental & Waste Services	0.59	6.06	2.58	5.03	5.84	0.71	30.39%	4.55%	30.39%
Farming/Agriculture	1.04	6.24	10.37	15.16	5.67	1.58	42.97%	10.80%	42.97%
Financial Svcs. (Non-bank & Insurance)	0.23	41.84	0.46	0.56	-3.47	0.61	66.48%	1.70%	66.48%
Food Processing	1.62	7.58	12.36	12.05	8.88	2.37	41.38%	24.10%	41.38%
Food Wholesalers	1.63	5.78	8.28	10.92	4.23	2.85	43.85%	4.09%	43.85%
Furn/Home Furnishings	2.53	7.98	4.83	4.63	38.82	2.46	21.62%	9.09%	21.62%
Green & Renewable Energy	0.22	55.55	6.30	41.97	-16.38	0.49	52.28%	39.21%	52.28%
Healthcare Products	0.91	4.22	3.24	8.22	2.86	0.93	20.88%	14.10%	20.88%
Healthcare Support Services	3.92	8.72	3.47	4.38	6.37	4.37	38.62%	4.45%	38.62%
Healthcare Information and Technology	1.05	4.37	3.06	11.14	2.24	1.45	26.68%	5.15%	26.68%
Homebuilding	0.34	1.13	1.76	6.51	0.85	0.61	43.95%	1.68%	43.95%
Hospitals/Healthcare Facilities	0.78	36.39	6.95	11.05	26.04	1.04	29.81%	14.72%	29.81%
Hotel/Camping	0.58	10.10	12.10	10.95	45.37	0.72	29.46%	12.04%	29.46%
Household Products	1.89	8.76	7.99	10.70	8.07	2.12	32.80%	22.00%	32.80%
Information Services	1.58	83.87	2.32	19.14	3.17	1.44	36.33%	9.07%	36.33%
Insurance (General)	1.16	659.89	9.93	2.33	-10.04	1.79	40.35%	0.25%	40.35%
Insurance (Life)	1.54	2930.90	30.28	7.71	-16.74	2.04	45.10%	0.43%	45.10%
Insurance (Prop/Cas.)	2.05	4468.19	9.80	2.95	-22.81	2.34	23.24%	0.90%	23.24%

Investments & Asset Management	0.23	3.68	0.94	4.99	2.04	0.58	65.74%	2.64%	65.74%
Machinery	1.06	3.32	2.79	4.37	2.56	1.37	32.94%	10.11%	32.94%
Metals & Mining	1.00	6.25	11.88	9.50	8.64	1.65	43.93%	25.55%	43.93%
Office Equipment & Services	1.44	6.34	5.60	12.21	4.17	1.64	26.89%	23.29%	26.89%
Oil/Gas (Integrated)	0.91	13.04	18.14	8.94	44.47	1.21	24.95%	49.77%	24.95%
Oil/Gas (Production and Exploration)	0.54	24.45	8.97	13.73	38.78	0.77	34.76%	42.88%	34.76%
Oil/Gas Distribution	0.77	43.51	9.71	14.21	21.82	1.59	54.98%	37.99%	54.98%
Oilfield Svcs/Equip.	1.96	14.36	13.80	10.84	33.49	3.33	44.47%	22.67%	44.47%
Packaging & Container	1.01	4.39	4.53	7.75	3.28	1.50	38.20%	29.40%	38.20%
Paper/Forest Products	0.63	5.01	5.30	7.41	4.07	1.12	48.97%	50.71%	48.97%
Power	0.52	18.40	6.98	6.41	-59.26	1.07	53.13%	45.11%	53.13%
Precious Metals	0.73	5.58	22.53	12.39	11.32	1.03	39.15%	48.02%	39.15%
Publishing & Newspapers	1.12	6.73	5.25	5.62	6.90	1.02	16.99%	10.13%	16.99%
R.E.I.T.	0.09	200.80	10.86	8.98	92.03	0.11	29.44%	33.66%	29.44%
Real Estate (Development)	0.48	0.46	6.88	2.90	0.61	0.87	49.95%	0.58%	49.95%
Real Estate (General/Diversified)	0.19	0.58	5.46	4.49	0.76	0.27	31.82%	2.58%	31.82%
Real Estate (Operations & Services)	0.14	2.54	6.63	5.95	2.89	0.23	37.42%	4.93%	37.42%
Recreation	0.91	1.75	7.61	6.35	3.56	1.16	32.45%	11.90%	32.45%
Reinsurance	1.25	143151.54	6.09	1.67	3715.31	1.24	14.03%	0.49%	14.03%
Restaurant/Dining	1.77	20.17	29.14	17.08	-72.88	2.55	28.58%	23.11%	28.58%
Retail (Automotive)	2.43	9.74	12.54	6.61	10.97	4.68	55.40%	11.88%	55.40%
Retail (Building Supply)	2.18	5.99	11.51	6.70	9.34	2.69	33.76%	12.75%	33.76%
Retail (Distributors)	2.28	8.11	8.02	9.00	7.20	4.23	48.25%	7.26%	48.25%
Retail (General)	1.52	8.19	20.41	7.60	-37.83	2.27	34.02%	29.22%	34.02%
Retail (Grocery and Food)	3.07	13.13	51.39	11.70	-111.53	5.11	37.13%	19.82%	37.13%
Retail (Online)	2.69	11.40	6.73	6.24	10.57	3.05	31.78%	5.03%	31.78%
Retail (Special Lines)	2.31	4.60	13.07	7.25	6.58	2.79	28.97%	7.80%	28.97%
Rubber & Tires	1.12	6.22	5.15	8.00	5.20	1.92	41.90%	41.24%	41.90%

Semiconductor	0.82	7.82	5.24	8.22	6.50	1.06	25.26%	77.15%	25.26%
Semiconductor Equip	0.96	7.77	3.79	5.54	4.06	1.56	39.60%	29.37%	39.60%
Shipbuilding & Marine	0.53	32.47	7.67	7.37	58.17	0.89	43.73%	17.43%	43.73%
Shoe	1.63	7.41	9.40	18.50	5.81	1.88	19.66%	6.90%	19.66%
Software (Entertainment)	0.79	296.36	7.29	21.23	36.25	0.73	9.23%	6.95%	9.23%
Software (Internet)	1.06	95.03	10.01	11.53	-63.73	1.21	24.72%	2.79%	24.72%
Software (System & Application)	1.07	8.58	3.30	8.83	3.67	1.04	13.95%	1.83%	13.95%
Steel	0.80	5.43	7.71	4.99	11.91	1.44	47.77%	32.36%	47.77%
Telecom (Wireless)	0.88	52.17	12.24	4.33	-4.90	1.30	35.93%	28.75%	35.93%
Telecom. Equipment	1.32	4.49	2.64	3.98	2.99	1.81	27.50%	5.53%	27.50%
Telecom. Services	1.08	64.39	7.19	4.98	-10.27	1.52	34.62%	25.28%	34.62%
Tobacco	1.83	3.85	15.99	26.70	3.99	2.12	21.71%	37.27%	21.71%
Transportation	0.79	12.97	8.41	7.69	12.33	1.49	49.90%	3.74%	49.90%
Transportation (Railroads)	0.46	17.52	10.74	11.86	-11.42	0.50	17.78%	7.17%	17.78%
Trucking	1.05	3.20	8.21	8.25	4.19	1.49	46.99%	17.63%	46.99%
Unclassified	0.05	30.46	7.60	26.52	0.86	0.05	7.53%	1.19%	7.53%
Utility (General)	0.28	8.39	4.10	4.94	7.64	1.05	72.23%	5.22%	72.23%
Utility (Water)	0.38	8.48	3.49	5.08	11.69	0.57	42.60%	14.62%	42.60%
Total Market	0.80	5.18	6.32	0.54	-0.69	1.26	45.96%	7.73%	45.96%

FORM THOROUGHLY ONLY

Annex 1.2. Profitability & Return

Industry Name	Net income/ Sales	Operating profit/ Sales	After tax operating profit/ Sales	EBITDA/ Sales	ROA	ROIC	ROA	OR	BEP
Advertising	5.03%	7.54%	6.43%	11.53%	8.79%	11.54%	8.44%	13.47%	19.33%
Aerospace/Defense	3.38%	5.98%	5.07%	9.96%	5.78%	5.67%	3.79%	6.74%	11.18%
Air Transport	2.72%	8.88%	7.75%	13.78%	5.53%	5.19%	2.00%	5.94%	10.15%
Apparel	4.10%	6.04%	5.19%	8.87%	7.81%	7.45%	5.70%	8.64%	12.33%
Auto & Truck	5.73%	4.77%	4.10%	7.63%	13.08%	6.88%	9.63%	7.98%	12.82%
Auto Parts	5.43%	7.00%	5.82%	10.82%	11.96%	10.00%	9.12%	11.78%	18.19%
Bank (Money Center)	38.17%	NA	NA	NA	15.15%	0.05%	8.84%	0.06%	#VALUE!
Banks (Regional)	36.60%	NA	NA	NA	16.37%	0.02%	9.51%	0.02%	#VALUE!
Beverage (Alcoholic)	17.23%	23.90%	19.44%	31.00%	16.60%	25.00%	22.28%	31.23%	40.07%
Beverage (Soft)	6.05%	9.61%	8.11%	14.15%	8.56%	11.83%	8.83%	14.15%	20.70%
Broadcasting	8.85%	17.41%	14.63%	28.27%	8.06%	13.12%	7.81%	15.63%	24.95%
Brokerage & Investment Banking	30.11%	0.04%	0.04%	0.28%	21.67%	0.05%	10.56%	0.06%	0.10%
Building Materials	4.98%	8.34%	6.95%	13.51%	6.64%	6.94%	4.89%	8.24%	13.22%
Business & Consumer Services	7.33%	7.20%	6.15%	9.62%	14.81%	11.69%	13.48%	13.66%	17.71%
Cable TV	11.61%	9.71%	8.77%	18.88%	11.66%	8.02%	10.16%	8.91%	16.53%
Chemical (Basic)	5.30%	8.02%	6.77%	13.16%	7.68%	6.43%	5.02%	7.61%	12.49%
Chemical (Diversified)	5.70%	8.51%	7.26%	11.22%	11.31%	9.31%	7.36%	11.03%	14.48%
Chemical (Specialty)	5.16%	10.91%	9.11%	14.90%	9.10%	9.60%	5.42%	11.47%	15.67%
Coal & Related Energy	1.80%	8.70%	7.69%	23.21%	1.64%	4.80%	1.15%	5.55%	14.76%
Computer Services	5.76%	7.66%	6.63%	9.10%	16.79%	18.29%	15.66%	21.07%	24.76%
Computers/Peripherals	4.75%	6.07%	5.26%	10.79%	10.66%	9.51%	8.93%	11.45%	20.33%
Construction Supplies	2.50%	4.57%	3.93%	12.16%	3.64%	3.75%	2.36%	4.34%	11.49%
Diversified	10.24%	16.91%	14.67%	20.57%	15.07%	13.70%	9.48%	15.81%	19.05%

Drugs (Biotechnology)	7.34%	7.79%	7.27%	13.62%	5.12%	9.14%	4.11%	9.22%	7.61%
Drugs (Pharmaceutical)	11.00%	14.09%	11.88%	16.86%	13.16%	12.18%	11.07%	14.27%	16.97%
Education	12.07%	16.02%	13.96%	23.99%	6.92%	11.33%	9.67%	13.06%	19.21%
Electrical Equipment	2.84%	5.45%	4.64%	8.45%	5.29%	6.51%	3.92%	7.56%	11.67%
Electronics (Consumer & Office)	1.63%	1.18%	1.06%	5.43%	6.26%	3.31%	3.24%	2.58%	10.82%
Electronics (General)	4.38%	4.96%	4.32%	9.44%	10.05%	7.96%	7.95%	9.06%	17.13%
Engineering/Construction	1.99%	4.70%	4.02%	6.50%	7.32%	7.72%	3.71%	8.81%	12.12%
Entertainment	5.45%	11.10%	9.75%	14.59%	4.91%	7.23%	4.44%	8.18%	11.88%
Environmental & Waste Services	12.29%	18.74%	16.38%	22.34%	8.77%	9.82%	7.25%	11.18%	13.19%
Farming/Agriculture	1.61%	4.88%	4.38%	8.34%	2.53%	4.50%	1.66%	5.02%	8.64%
Financial Svcs. (Non-bank & Insurance)	24.76%	9.85%	8.18%	10.68%	15.13%	1.89%	5.64%	2.28%	2.43%
Food Processing	3.77%	6.91%	5.93%	10.51%	8.93%	9.66%	6.10%	11.24%	17.02%
Food Wholesalers	2.30%	4.06%	3.54%	5.28%	6.56%	5.87%	3.76%	6.75%	8.62%
Furn/Home Furnishings	7.51%	7.93%	6.62%	10.14%	18.46%	17.42%	18.99%	20.67%	25.66%
Green & Renewable Energy	26.02%	41.73%	37.36%	68.10%	12.81%	8.20%	5.72%	9.14%	14.97%
Healthcare Products	4.33%	9.99%	8.94%	13.99%	4.02%	8.56%	3.94%	9.18%	12.72%
Healthcare Support Services	2.65%	4.81%	4.01%	5.55%	11.58%	16.09%	10.37%	19.27%	21.74%
Healthcare Information and Technology	8.21%	12.99%	12.05%	16.44%	11.92%	13.39%	8.65%	13.98%	17.33%
Homebuilding	2.58%	9.63%	8.51%	15.44%	1.58%	2.91%	0.88%	3.29%	5.27%
Hospitals/Healthcare Facilities	11.19%	15.27%	12.36%	19.46%	11.68%	8.19%	8.72%	10.12%	15.17%
Hotel/Gaming	13.73%	14.41%	12.45%	24.49%	9.88%	6.99%	8.03%	8.10%	14.32%
Household Products	8.99%	13.55%	11.49%	15.77%	19.07%	22.10%	17.02%	26.18%	29.86%
Information Services	16.32%	20.09%	16.34%	26.41%	23.43%	26.62%	25.80%	32.29%	41.75%
Insurance (General)	7.29%	10.39%	9.02%	9.21%	13.04%	10.53%	8.44%	12.13%	10.66%
Insurance (Life)	7.78%	9.83%	8.57%	8.83%	15.90%	13.37%	12.00%	15.34%	13.61%
Insurance (Prop/Cas.)	6.75%	8.16%	6.82%	7.79%	15.78%	13.99%	13.32%	16.74%	15.94%
Investments & Asset Management	22.80%	25.59%	23.60%	23.35%	13.22%	5.24%	5.16%	5.68%	5.28%

Machinery	4.99%	6.95%	5.86%	11.38%	6.83%	6.28%	5.31%	7.42%	12.10%
Metals & Mining	0.94%	6.91%	6.18%	12.46%	1.54%	6.06%	0.93%	6.76%	12.41%
Office Equipment & Services	3.93%	6.50%	5.70%	7.98%	6.45%	8.34%	5.68%	9.58%	11.52%
Oil/Gas (Integrated)	3.88%	6.35%	4.59%	16.70%	4.70%	3.57%	3.55%	4.96%	15.27%
Oil/Gas (Production and Exploration)	5.01%	17.23%	15.87%	47.30%	3.84%	8.67%	2.70%	9.39%	25.47%
Oil/Gas Distribution	5.84%	10.25%	8.95%	12.73%	9.30%	6.94%	4.49%	7.95%	9.78%
Oilfield Svcs/Equip.	1.56%	3.70%	3.22%	5.44%	5.19%	6.30%	3.05%	7.20%	10.66%
Packaging & Container	8.27%	8.39%	6.93%	13.72%	12.44%	7.08%	8.34%	8.52%	13.83%
Paper/Forest Products	2.64%	8.45%	7.39%	15.55%	2.95%	4.48%	1.67%	5.24%	9.80%
Power	9.41%	16.30%	13.58%	25.50%	10.07%	7.01%	4.90%	8.42%	13.27%
Precious Metals	-2.09%	9.40%	8.27%	19.10%	-2.16%	6.08%	-1.54%	6.92%	14.02%
Publishing & Newspapers	8.68%	9.57%	8.28%	13.94%	8.85%	9.36%	9.72%	10.81%	15.61%
R.E.I.T.	104.74%	66.74%	64.55%	57.69%	11.97%	5.41%	8.92%	5.60%	4.91%
Real Estate (Development)	14.44%	18.42%	14.77%	19.48%	12.54%	7.13%	6.96%	8.89%	9.38%
Real Estate (General/Diversified)	32.22%	27.11%	23.04%	29.30%	8.60%	4.38%	6.14%	5.16%	5.59%
Real Estate (Operations & Services)	27.61%	42.03%	37.13%	47.62%	6.38%	5.04%	3.86%	5.71%	6.67%
Recreation	9.36%	12.10%	10.26%	16.80%	10.82%	9.48%	8.51%	11.03%	15.28%
Reinsurance	9.92%	14.05%	12.19%	12.24%	12.30%	15.36%	12.44%	17.70%	15.55%
Restaurant/Dining	3.54%	6.46%	5.49%	10.86%	9.04%	11.57%	6.27%	13.61%	19.24%
Retail (Automotive)	1.33%	3.62%	2.93%	5.76%	6.21%	7.14%	3.23%	8.83%	14.00%
Retail (Building Supply)	4.54%	8.23%	6.83%	14.77%	12.24%	14.67%	9.89%	17.68%	32.14%
Retail (Distributors)	1.17%	2.29%	1.95%	4.49%	4.94%	4.57%	2.65%	5.37%	10.22%
Retail (General)	4.05%	5.86%	4.43%	9.03%	9.19%	5.70%	6.18%	7.54%	13.77%
Retail (Grocery and Food)	1.63%	3.73%	3.00%	5.92%	8.33%	9.10%	5.01%	11.32%	18.17%
Retail (Online)	-0.96%	2.38%	2.08%	4.10%	-2.93%	5.83%	-2.59%	6.58%	11.04%
Retail (Special Lines)	4.13%	4.92%	4.01%	6.88%	11.51%	11.21%	9.54%	13.78%	15.91%
Rubber & Tires	5.22%	8.49%	7.12%	16.48%	10.01%	8.09%	5.87%	9.56%	18.53%

Semiconductor	15.65%	17.33%	15.31%	31.24%	16.63%	12.82%	12.77%	14.17%	25.49%
Semiconductor Equip	5.42%	9.41%	8.30%	14.54%	8.46%	8.19%	5.20%	9.15%	13.95%
Shipbuilding & Marine	5.05%	8.08%	7.16%	16.03%	4.51%	3.60%	2.67%	4.06%	8.46%
Shoe	6.77%	8.03%	6.52%	10.73%	12.72%	11.70%	11.05%	14.44%	17.52%
Software (Entertainment)	14.84%	8.20%	7.34%	16.75%	10.85%	6.73%	11.78%	6.67%	13.29%
Software (Internet)	19.32%	22.54%	19.83%	22.67%	23.41%	22.57%	20.41%	24.73%	23.35%
Software (System & Application)	9.38%	10.55%	9.34%	12.97%	9.72%	10.25%	10.03%	11.51%	13.85%
Steel	-2.66%	3.30%	2.92%	13.18%	-3.83%	2.31%	-2.14%	2.65%	10.57%
Telecom (Wireless)	7.83%	15.81%	13.17%	35.06%	10.18%	12.06%	6.87%	14.51%	30.78%
Telecom Equipment	3.92%	4.71%	4.20%	6.25%	7.11%	6.07%	5.16%	6.33%	8.22%
Telecom Services	7.66%	12.26%	10.46%	29.98%	11.63%	11.76%	8.29%	13.79%	32.45%
Tobacco	18.37%	23.60%	19.35%	26.97%	38.92%	35.44%	33.56%	43.26%	49.27%
Transportation	6.68%	10.93%	8.92%	16.49%	9.95%	7.14%	5.30%	8.74%	13.09%
Transportation (Railroads)	23.05%	27.48%	20.76%	33.56%	11.48%	9.71%	10.68%	12.86%	15.55%
Trucking	6.42%	8.24%	6.82%	17.58%	9.58%	7.34%	6.75%	8.86%	18.49%
Unclassified	38.78%	57.22%	56.07%	-5.13%	1.77%	2.53%	1.75%	2.58%	-0.23%
Utility (General)	-1.01%	16.12%	14.11%	45.73%	-1.06%	3.95%	-0.28%	4.52%	12.80%
Utility (Water)	16.54%	24.61%	20.16%	34.07%	9.43%	7.54%	6.22%	9.21%	12.81%
Total Market	8.04%	8.23%	7.05%	13.33%	10.16%	5.62%	6.41%	6.56%	10.72%

Q4 CY17

Annex 1.3. Stock market

Industry Name	Market capitalization (M€) (USD)	Price to earning ratio (PER)	Price to sales ratio (PSR)	Price to book ratio (PBR)	Dividend payout ratio (DPR)	Dividend yield (%)
Advertising	35,661	38.30	3.58	4.98	77.69%	1.09%
Aerospace/Defense	104,644	104.70	2.31	3.52	58.25%	0.85%
Air Transport	178,839	43.96	0.98	1.97	67.73%	1.88%
Apparel	264,322	84.77	1.41	2.60	57.10%	1.65%
Auto & Truck	308,430	54.61	0.72	1.48	27.92%	2.23%
Auto Parts	239,495	70.75	1.34	2.57	30.81%	1.25%
Bank (Money Center)	2,696,910	18.01	3.12	1.13	29.75%	3.64%
Banks (Regional)	88,499	18.30	2.65	1.01	23.62%	3.26%
Beverage (Alcoholic)	268,616	130.60	4.16	4.07	62.53%	2.59%
Beverage (Soft)	22,578	46.14	1.62	2.10	46.34%	1.73%
Broadcasting	51,495	45.91	3.48	2.96	81.23%	2.06%
Brokerage & Investment Banking	448,310	96.77	4.07	1.93	24.56%	1.80%
Building Materials	66,490	59.83	1.59	2.02	54.37%	1.71%
Business & Consumer Services	96,514	43.87	3.07	5.32	45.93%	1.10%
Cable TV	107,008	229.67	6.92	5.07	27.74%	0.47%
Chemical (Basic)	460,465	95.58	1.38	1.80	66.77%	2.55%
Chemical (Diversified)	24,160	40.00	1.12	2.05	13.59%	0.69%
Chemical (Specialty)	246,582	9.39	1.80	2.99	83.40%	2.39%
Coal & Related Energy	177,392	159.03	1.44	1.17	309.94%	3.89%
Computer Services	313,650	82.71	1.74	4.19	35.76%	1.18%
Computers/Peripherals	329,936	241.41	0.66	1.36	27.12%	1.97%
Construction Supplies	471,115	190.03	1.31	1.73	138.94%	2.66%
Diversified	489,753	32.24	0.94	0.80	25.47%	2.77%
Drugs (Biotechnology)	107,211	1274.02	14.78	7.00	57.12%	0.28%
Drugs (Pharmaceutical)	590,583	77.95	4.52	4.41	30.62%	0.75%
Education	19,700	214.54	2.78	1.91	40.54%	1.75%

Electrical Equipment	385,481	95,02	2,03	3,22	70,91%	0.99%
Electronics (Consumer & Office)	55,777	62,77	0,50	1,63	46,20%	1,49%
Electronics (General)	462,198	86,77	1,12	2,31	39,85%	1,56%
Engineering/Construction	404,937	66,04	0,50	1,50	152,62%	6,05%
Entertainment	92,999	204,79	8,39	4,58	57,00%	0,37%
Environmental & Waste Services	48,380	304,96	6,71	3,79	41,33%	0,76%
Farming/Agriculture	223,327	7,36	1,74	2,75	97,71%	0,90%
Financial Svcs. (Non-bank & Insurance)	273,963	224,99	3,36	1,97	35,67%	2,63%
Food Processing	508,379	98,89	1,20	2,64	50,95%	1,60%
Food Wholesalers	14,637	258,25	0,55	1,50	66,57%	2,79%
Furn/Home Furnishings	167,002	54,99	1,45	2,76	42,90%	2,22%
Green & Renewable Energy	94,564	44,18	4,78	1,85	59,61%	3,25%
Healthcare Products	67,677	148,36	5,41	4,59	72,61%	0,58%
Healthcare Support Services	80,751	105,42	0,84	2,94	59,39%	1,88%
Healthcare Information and Technology	23,559	100,16	9,25	8,56	37,31%	0,33%
Homebuilding	11,197	50,32	1,18	0,94	170,39%	3,74%
Hospitals/Healthcare Facilities	76,088	44,13	3,70	3,46	41,67%	1,26%
Hotel/Gaming	212,623	118,62	2,47	1,55	33,13%	1,84%
Household Products	214,484	136,98	3,51	6,62	45,18%	1,16%
Information Services	38,748	89,88	3,64	4,35	25,92%	1,16%
Insurance (General)	88,211	25,18	1,08	1,86	40,42%	2,73%
Insurance (Life)	411,580	16,74	1,09	1,77	23,79%	1,71%
Insurance (Prop/Cas.)	121,959	15,39	0,63	1,19	13,64%	1,46%
Investments & Asset Management	87,804	221,43	2,37	1,02	31,36%	3,02%
Machinery	358,700	92,91	3,08	3,65	60,46%	0,98%
Metals & Mining	251,991	99,56	1,07	1,63	268,04%	2,34%
Office Equipment & Services	14,521	143,58	2,44	3,69	44,74%	0,72%
Oil/Gas (Integrated)	482,935	12,22	0,47	0,63	47,41%	3,89%

Oil/Gas (Production and Exploration)	172,206	46,93	1.27	1.02	125.97%	4.95%
Oil/Gas Distribution	51,079	66,25	0.95	1.30	75.22%	4.63%
Oilfield Svcs/Equip.	263,286	46,34	0.52	1.69	52.87%	1.58%
Packaging & Container	61,551	42,62	1.69	2.30	51.73%	2.53%
Paper/Forest Products	81,704	185,86	1.23	1.50	89.50%	1.92%
Power	634,824	37,75	1.27	1.28	60.83%	4.52%
Precious Metals	97,542	50,93	1.30	1.41	0.76%	1.58%
Publishing & Newspapers	73,354	78,74	3.41	3.10	51.03%	1.30%
R.E.I.T.	71,211	14,86	9,10	0.96	49.91%	5.75%
Real Estate (Development)	622,785	104,79	1.67	1.07	60.88%	5.27%
Real Estate (General/Diversified)	383,251	130,17	3.65	0.81	32.46%	2.87%
Real Estate (Operations & Services)	180,679	85,40	4.42	0.73	40.26%	2.52%
Recreation	68,169	107,93	3.57	3.20	42.66%	1.12%
Reinsurance	50,541	12,57	1.18	1.01	17.87%	1.50%
Restaurant/Dining	30,917	158,78	1.33	3.33	73.18%	1.95%
Retail (Automotive)	30,749	77,84	0.42	1.78	97.16%	3.09%
Retail (Building Supply)	6,956	18,18	0.75	2.39	41.56%	2.54%
Retail (Distributors)	156,582	541,42	0.49	1.82	94.90%	2.26%
Retail (General)	249,561	46,31	0.93	2.03	37.19%	1.63%
Retail (Grocery and Food)	85,082	42,38	0.62	2.98	84.99%	2.22%
Retail (Online)	6,783	80,67	0.84	2.58	0.20%	0.15%
Retail (Special Lines)	121,865	55,03	0.92	2.40	50.71%	2.26%
Rubber & Tires	40,790	43,68	1.05	1.79	37.37%	1.85%
Semiconductor	359,805	79,54	2.45	2.37	40.15%	2.57%
Semiconductor Equip	41,325	65,27	1.74	2.33	44.21%	1.38%
Shipbuilding & Marine	200,420	42,07	1.67	1.27	86.87%	2.63%
Shoe	46,556	23,61	1.26	2.04	79.42%	4.27%
Software (Entertainment)	25,422	47,44	4.96	2.73	19.65%	0.59%

Software (Internet)	305,465	244.52	9.15	8.15	12,04%	0.25%
Software (System & Application)	194,893	105.90	8.91	7.45	46,41%	0.49%
Steel	248,543	55.83	0.57	0.87	0.74%	3.89%
Telecom (Wireless)	531,084	26.05	1.53	1.85	83,28%	4.25%
Telecom, Equipment	155,361	95.35	2.44	3.80	55,78%	0.90%
Telecom, Services	348,116	148.42	1.28	1.56	64,11%	3.84%
Tobacco	111,134	117.59	4.39	9.68	61,76%	2.58%
Transportation	115,393	45.85	1.26	1.62	74,66%	3.95%
Transportation (Railroads)	67,571	36.02	3.21	1.50	48,30%	3.47%
Trucking	40,753	34.00	1.84	2.40	40,79%	1.42%
Unclassified	5,368	10,68.54	17.06	0.90	87,67%	1.99%
Utility (General)	18,654	55.43	1.28	1.17	3.07%	3.99%
Utility (Water)	79,578	117.12	4.19	2.14	49,27%	1.94%
Total Market	19,939,734	108.96	1.43	1.59	46,67%	2.59%

FOR AUTHOR USE ONLY

Annex 2

Non-financial performances achieved by Romanian companies (study for 2012)

Companies	Report „Comply or Explain Statement”	Corporate governance performances					Environmental and social performances				
		AE	GC	SCORE of Governance structure	SCORE of Investor relations	SCORE of Board and management	CSR	Performing social and environmental activities			
								P	S	C	F
1.ARS	YES		36	3	10	16		7		YES	
2.ALR	YES		41	10	10	15		6		YES	
3.ALIT	YES		33	9	9	12		3		YES	
4.ALU	YES		29	3	9	12		5		YES	
5.AMO	YES		19	1	10	7		1		NO	
6.ATB	YES		44	7	10	17		10		YES	
7.ARM	YES		26	1	10	13		2		YES	
8.ARTE	YES		8	1	6	0		1		YES	
9.AZO	YES		37	10	9	13		5		YES	
10.BRM	YES		40	6	10	18		6		YES	
11.BIO	YES		36	9	9	14		4		YES	
12.SPCU	YES		22	1	10	7		4		NO	
13.TEL	YES		41	10	9	12		10		YES	
14.CAOR	NO		1	0	0	0		1		NO	
15.CBC	NO		5	0	4	0		1		YES	
16.BCM	NO		0	0	0	0		0		NO	
17.CEON	YES		32	2	10	12		8		YES	
18.CMCM	NO		4	0	1	0		3		NO	
19.CMF	YES		19	4	7	5		3		YES	

		YES	38	8	10	10	10	NO
20.CMP		NO	3	0	2	0	1	NO
21.ENP		YES	29	8	6	12	3	YES
22.COFI		YES	49	10	10	19	10	YES
23.COMI		NO	10	0	9	0	1	YES
24.CGC		YES	40	10	10	11	9	YES
25.DAFR		NO	10	0	9	0	1	NO
26.ELJ		YES	32	10	10	11	1	YES
27.ELGS		YES	23	5	8	8	2	YES
28.ELMA		YES	32	2	10	12	8	YES
29.EPT		YES	33	8	9	11	5	YES
30.RMAH		YES	32	4	10	15	3	YES
31.ECT		YES	39	7	10	16	5	YES
32.IMP		NO	10	0	9	0	1	YES
33.MECF		YES	36	10	10	14	2	YES
34.COS		YES	46	9	10	17	10	YES
35.MEF		NO	10	0	9	0	1	NO
36.MJM		YES	38	7	9	13	9	YES
37.OIL		YES	38	9	10	14	5	YES
38.OLT		YES	49	9	10	20	10	YES
39.SNP		NO	0	0	0	0	0	NO
40.PEI		YES	46	10	10	19	7	YES
41.PREH		YES	26	6	9	9	2	YES
42.PPL		YES	33	4	10	16	3	YES
43.RTRA		YES	35	10	10	12	13	YES
44.ROCE		YES	49	9	10	20	10	YES
45.RRC		YES	49	9	10	20	10	YES
46.PTR		YES	46	9	10	20	10	YES
47.RPH		YES	46	9	10	18	9	YES
48.TGN		YES	46	10	10	16	10	YES
49.BRK		YES	33	4	8	14	7	YES
50.SNO		NO	31	1	10	15	5	YES
51.BVB		NO	45	8	10	17	10	YES
52.FP		NO	10	0	9	0	1	NO
53.COTR		YES	32	5	10	11	6	YES
54.SIFI		YES	47	10	10	17	10	YES

55.SIF2	YES	46	10	10	16	10	16	YES
56.SIF4	YES	44	9	10	16	9	16	YES
57.SIF5	YES	44	10	10	16	8	16	YES
58.SIF3	YES	44	9	10	17	8	17	YES
59.STZ	YES	19	1	10	7	1	1	NO
60.SRT	NO	8	0	7	0	1	1	NO
61.SOCP	YES	23	1	10	10	2	2	YES
62.STB	NO	10	0	9	0	1	1	NO
63.TRP	YES	40	8	9	17	6	6	YES
64.MPN	YES	40	10	10	13	7	7	YES
65.ART	YES	34	9	8	8	9	9	YES
66.TBM	YES	45	9	10	18	8	8	YES
67.TUFE	NO	10	0	9	0	1	1	NO
68.EFO	NO	10	0	9	0	1	1	NO
69.UAM	NO	11	1	9	0	1	1	NO
70.UCM	NO	10	0	9	0	1	1	YES
71.UZT	NO	0	0	0	0	0	0	NO
72.VESY	YES	33	3	10	14	6	6	YES
73.APC	NO	49	9	10	20	10	10	YES
74.VNC	YES	40	10	10	11	9	9	YES
75.SCD	YES	37	8	10	15	4	4	YES
76.ZIM	NO	10	0	9	0	1	1	NO



yes I want morebooks!

Buy your books fast and straightforward online - at one of the world's fastest growing online book stores! Environmentally sound due to Print-on-Demand technologies.

Buy your books online at
www.get-morebooks.com

Kaufen Sie Ihre Bücher schnell und unkompliziert online – auf einer der am schnellsten wachsenden Buchhandelsplattformen weltweit!
Dank Print-On-Demand umwelt- und ressourcenschonend produziert.

Bücher schneller online kaufen
www.morebooks.de

OmniScriptum Marketing DEU GmbH
Bahnhofstr. 28
D - 66111 Saarbrücken
Telefax: +49 681 93 81 567-9

info@omnascriptum.com
www.omnascriptum.com



FOR AUTHOR USE ONLY