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Mrs./Ms. ....

.....

We inform you that on **25.09.2015**, at **11:00**, in the conference room **R 502**, Mrs. **Mihaela Alina ROBU** will defend, in a public session, her doctoral thesis entitled “*The analysis and evaluation of value relevance of financial statements for the capital market*”, in order to obtain a PhD title in the field of **ACCOUNTING**.

The doctoral committee has the following members:

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We provide you the abstract of the PhD thesis and we invite you to attend the public presentation of the thesis.

**RECTOR,**

*PhD. Prof. Vasile IȘAN*

**Alexandru Ioan Cuza University of Iași**  
**Faculty of Economics and Business Administration**  
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*Field: Accounting*

***THE ANALYSIS AND EVALUATION OF VALUE  
RELEVANCE OF FINANCIAL STATEMENTS FOR  
THE CAPITAL MARKET***

- Abstract of the PhD Thesis -

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**PhD. Prof. Marilena MIRONIUC**

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**Iași, 2015**

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## GENERAL INTRODUCTION

“It is said that numbers lead the world; maybe. I am convinced that they are numbers that show when the government is good or bad” (Johann Wolfgang Goethe)

### Research problem

The last decades, marked by financial instability, extremely fluctuant evolution of different rates of traded values within financial markets, stock exchange speculations and financial scandals have negatively influenced the economic dynamics and have brought back the analysis of these factors' impact on the societies' capacity of operating and reaching both their own interests and the ones of the stakeholders. The persistency of these disastrous phenomena has determined the worsening of the actual financial crisis and, moreover, of the concerns regarding the development of the best methods of analyzing the essential elements related to a company, such as the performance and the risk.

In the actual context of the market economy mechanisms and of the growth of the diversity of the factors that influence the good evolution of listed companies, the stakeholders' requirements regarding the gathering of the most relevant information needed for the analysis and evaluation of performances and risks have increased. As well, the present situation has questioned the viability of the solutions regarding the profits that could be earned, emphasizing an insufficient knowledge, an evaluation that is wrong in most cases, as well as the lack of a performance growth strategy and of risk prevention or the existence of a faulty risk management.

The opportunities provided by the financial market and the enhancement of the risks associated to the market lead available capital owners to the development and use of new strategies, methods and techniques that can emphasize the most efficient investments, featured by a risk level that was *a priori* established. Of these investments, the financial assets such as stocks have always been preferred by capital owners as a result of the decisional and material advantages they provide.

Investors appreciate the performance of a company through the stock return. Stock return is considered from the major investors' perspective through the growth of the stock price and of the net earnings per share, while the minor investors that are interested in dividend distribution appreciate the dividend yield. Major stakeholders pursue to reinvest the profits they have gained during a financial exercise and not to distribute the dividends such as to influence the growth of the stock price. The stock price of a stock represents the investors' expectances regarding future cash flows, the capacity of the company to create value for the stockholders (Mironiuc, 2006).

In order to reach the performance objectives, an investor identifies those financial assets that could provide him the highest return, based on the information available to him, especially on the information in the companies' financial statements.

## **Research motivation and significance**

Different meanings under which different concepts are used, as well as the diversity of existing methods, techniques and instruments, make the investors decisions difficult, the path they follow to reach the expected return. Moreover, the different methods the investors use and the means they use can pursue different objectives and results, which can determine the reaching of different results and the making of wrong decisions.

Listed companies can own significance as a result of the high values that are traded on the stock exchange, of the activities volume, of the impact on national or international economy. This is also the place of origin of the need to permanently reconsider the methods, procedures, techniques, rules, assumptions, principles and means of evaluating the listed company's stock. By doing so, the system allows the making of the most adequate decisions to investors.

## **Research objectives**

The literature regarding the decisions investors make emphasize the importance of reported information in the financial statements. Though, at international level, the subject has existed since 1960, with permanent new ideas, methods and techniques to ease the decision making process, the literature regarding the capital market in Romania, it is poorly approached.

From the theoretical-applicative perspective, this paper proposes a series of general and working hypotheses which are to be validated in the case of Romanian listed companies, which lead to the reaching of the research objectives.

The structuring of the paper on sections imposes the strict delimitation of the research objectives. From the theoretical perspective, we propose a presentation of the main used concepts by investors on the capital market, as well as the presentation of the methodology stockholders use to analyze and evaluate the stock return, starting from financial information. On the other side, by identifying the main research directions in the literature, from the applicative perspective, we pursued the analysis and evaluation of the relation between financial information and the stock return within the BSE, a concept that is known as value relevance. This general objective can be reached starting from a series of financial ratios that are met in the literature and from a series of non-financial information that is specific to each company. By owning this information, the paper proposes the identification of the financial ratios with value relevance and of the main components in the financial statements that influence the stock return, the identification of the relation type between the stock return and financial ratios, the evaluation of the impact of the use of the International Financial Reporting Standards (IFRS) on the investors' decisions and proposes the estimation of the parameters of an econometric model to determine the risk of low value relevance emergence.

## THE SYNTHETIC PRESENTATION OF THE CHAPTERS

Reaching the research objectives regarding the topic of the *analysis and evaluation of the value relevance of the financial statements* on the capital market has determined the structuring of the thesis in two main, different but complementary parts.

**First part** displays a series of conceptual and methodological delimitations regarding the main notions investors meet on the financial market and consists of 5 chapters.

**Chapter 1**, called “**The financial market – mean of capital formation**” synthetically describes the meanings of the financial market concept, starting from the epistemic dimensions of the market. Subsequently, we make a run into the history of the financial market emergence and a short overview of the role and structure of the capital market, mainly based on the capital market in Romania, represented by the Bucharest Stock Exchange (BSE). Of the traded financial instruments, stocks have always been preferred by capital owners due to the material and decisional advantages they provide. Moreover, as a result of the judicial organization form of companies such as joint companies, the issuance of such financial instruments continues to represent the main financing form of companies, designed to develop and increase the owners’ equity.

Within **Chapter 2**, called “**The analysis and the evaluation of the financial instruments such as stocks within capital markets**”, we present and explain the main notions investors meet in the decision making process (price, stock return, risk, systemic risk, non-systemic risk, stock ratios) and we identify the main factors that influence the stock return. A frequent topic which is met in the literature pursues the characterization of the relation between emerged risks and the return that is obtained as a result of owning financial titles such as stocks, through balance models. The insufficiency of the Capital Assets Pricing Model (CAPM) has also shown the importance of other indicators (macroeconomic/ microeconomic, financial/ non-financial) when explaining the stock price and stock return, others that the market return.

**Chapter 3** is entitled “**Macroeconomic factors with influence on the stock return**”, based on the implications of the general economic conditions, of the monetary policy and the price level on the stock price and stock return. Subsequently, through a case study, we analyze the existing relation between a series of macroeconomic factors (gross domestic product, industrial production index, unemployment rate, interest rate, inflation rate, the Eur and USD exchange, taxation policies and external events) and the BET index corresponding to the BSE, in order to test the claims in the literature regarding this relation. In this chapter also, we analyze the non-financial factors, specific to the investors’ behavior, through a case study based on the investors placing their available capitals on the BSE.

**Chapter 4**, “**The value relevance of financial statements for the capital market**”, pursues an analytical presentation of the relation between the stock price and stock return on one side, and the financial and non-financial information on the other side. The existing relation between the two categories of information is known

in the literature as value relevance. From the perspective of the analyzed subject, chapter 4 is divided in three parts. The first one aims at the identification of the financial and non-financial factors influencing the stock price and stock return. The second one concentrates on the identification of the relation type existing between the information presented in the financial statements and the stock return. The last part pursues the comparative analysis of the implications the national and international regulation has on the stock price and stock return.

**The second part**, the applicative one, consists of two empirical studies, regarding the value relevance of financial statements and includes two chapters.

**Chapter 5, “Study regarding the level of knowledge of the value relevance of financial statements in the international literature”**, presents the main research directions in the analysis of the value relevance of financial statements and represents the starting point of hypotheses development. This chapter represents an empirical study, a qualitative and quantitative analysis regarding the knowledge level of the topic regarding the value relevance of financial statements in an international environment. To reach this objective, we used a series of scientific articles issued in the two most important journals, depending on the citations number (Journal of Accounting and Economics and The Accounting Review), within the ranking made by Google Scholar, Accountability and Taxation category.

**Chapter 6**, the last one, **“Study regarding the value relevance of financial statements on the Romanian capital market”**, describes the research methodology and the main reached results. Research methodology pursues a positivist, logic demarche, consisting of the hypotheses that were developed to be tested, the corresponding objectives, analyzed variables and data source, namely the data analysis methods used to reach the research results.

Starting from the problems emphasized in the literature, related to the analysis and the evaluation of the value relevance of financial statements, we propose the following general research hypotheses:

**H<sub>1</sub>**: *For the Romanian BSE listed companies, there is a series of financial and non-financial indicators with value relevance to investors;*

**H<sub>2</sub>**: *For the Romanian BSE listed companies, there is a non-linear relation between the financial indicators reached based on financial statements and the stock return, stronger than in the case of linear relation.*

**H<sub>3</sub>**: *For the Romanian BSE listed companies, the value relevance of financial statements that are issued according to the International Financial Reporting Standards (IFRS) is higher than the one of the financial statements that are issued according to national regulation.*

**H<sub>4</sub>**: *At the level of the analyzed population, by associating some financial indicators, we reach the company profile whose financial indicators are considered to have significant value relevance.*

**H<sub>5</sub>**: *At the level of the BSE, companies can be classified in different stock performance groups, based on a discriminant analysis.*

**H<sub>6</sub>**: *For the Romanian BSE listed companies, the risk of low value relevance existence of financial statements can be estimated based on the identified financial indicators.*



### ***Studied population and analyzed sample:***

The studied population is represented by all Romanian companies listed on the regulated Bucharest Stock Exchange market, for which, starting with the financial exercise in 2012, the financial statements are issued according to the International Financial Reporting Standards adopted by the European Union. The time horizon for which the analysis of the value relevance was realized is represented by the 2012 and 2013 financial exercises. In turn, to compare the value relevance of the financial statements issued according to the IFRS to the ones that meet the national standards, the time horizon was extended with 2010 and 2011 financial exercises.

From the analyzed target population, we extracted a sample of 61 BSE listed companies in the financial exercise of 2013 and 59 BSE listed companies in the financial exercise of 2012. This ensures a total of 120 observations.

In order to compare the value relevance of financial statements issued according to the IFRS, to the ones issued according to the national regulation, the target population consists of all the BSE listed companies between 2012 and 2013. This period is chosen as a result of the transition from the national regulation, used to issue the financial statements, to the international standards. To carry out this comparison, we selected from the target population only those companies that were listed both between 2010 and 2011 and between 2012 and 2013. Thus, the final sample is formed of 54 listed companies in the 2011 and 2013 financial exercises and 52 listed companies in the 2010 and 2012 financial exercises, with a total of 212 analyzed observations.

### ***Variables used in the analysis and data source:***

Starting from the profile studies in the literature, which use financial ratios, in order to analyze the value relevance of financial statements, the present research proposes the use of liquidity, solvability and profitability ratios and some non-financial information (activity field, used accounting standards, the auditor and the audit report, the nature of the stockholder that owns most of the stocks).

**Table 1.**Numerical variables proposed in the analysis

Numerical variables	Formula
<b>Solvability ratios</b>	
X <sub>1</sub> =General Solvency Ratio (RSG)	<i>Total Assets / Total Debt</i>
X <sub>2</sub> =Debt Ratio (RIG)	<i>Total Debt / Total Assets</i>
X <sub>3</sub> =Financial Leverage Ratio (LF)	<i>Total Debt / Stockholders Equity</i>
X <sub>4</sub> =Long Term Debt to Equity Ratio (RIT)	<i>Noncurrent Debt / Stockholders Equity</i>
X <sub>5</sub> =Financial Autonomy Ratio (RAF)	<i>Stockholders Equity / Total Assets</i>
X <sub>6</sub> =Interest to Turnover Ratio (RPDF)	<i>Total Interest / Turnover</i>
<b>Liquidity ratios</b>	
X <sub>7</sub> =General Liquidity Ratio (RLG)	<i>Current Assets / Current Debt</i>
X <sub>8</sub> =Net Working Capital to Sales Ratio (PFR)	<i>(Current Assets – Current Debt) / Turnover</i>
<b>Profitability ratios</b>	
X <sub>9</sub> =Earnings per Share (EPS)	<i>Net Income / Number of Stocks</i>
X <sub>10</sub> =Return on Equity (ROE)	<i>Net Income / Stockholders Equity</i>
X <sub>11</sub> =Return on Assets (ROA)	<i>Operating Income / Total Assets</i>
X <sub>12</sub> =Net Margin (MN)	<i>Net Income / Turnover</i>
X <sub>13</sub> =Operating Income to Sales Ratio (PAE)	<i>Operating Income / Turnover</i>
<b>Cash Flow ratios</b>	
X <sub>14</sub> =Operating Cash Flow per Share (Cfa)	<i>Cash flow din exploatare / Number of Stocks</i>

As a dependent variable, the study considered the *stock return* – SR.

#### **Data analysis methods:**

According to the set objectives and hypotheses, we propose the following methods:

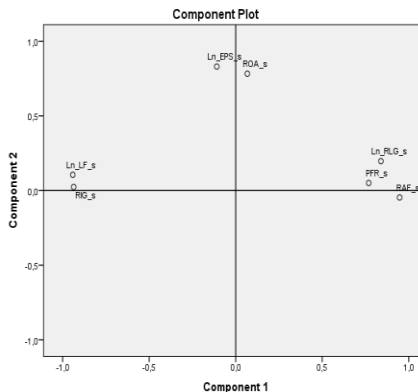
- *Multiple Correspondence Analysis (MCFA)*, to determine the features of some companies whose financial statements are considered to have a significant value relevance;
  - *Principal Component Analysis (ACP)* to identify the financial factors that can significantly influence the stock return;
  - *Logistic Regression Analysis (LRA)* in order to estimate the parameters of an econometric model designed to determine the emergence risk of low value relevance;
  - *Multiple Discriminant Analysis (MDA)* to estimate the parameters of a score function which classifies companies in groups of stock market performance;
  - *The multiple regression and ANCOVA analysis*, to estimate the parameters of an econometric model that presents the relation between financial, non-financial information and the stock return;
  - ANOVA to determine the significant differences between the financial information displayed before and after the implementation of IFRS.
- Data analysis was made using the statistical SPSS 20.0 software.

Depending on the proposed hypotheses and objectives, research results lead to the identification of some financial ratios and non-financial factors with value relevance to stockholders and also of the relation type between them and the financial information, the comparison of the value relevance of financial statements issued according to IFRS with the ones of the financial statements issued according to national standards, the reaching of a company profile whose financial ratios are seen as having significant value relevance, the estimation of some score functions to classify companies depending on their stock performance, the estimation of some econometric models' parameters to evaluate the risk of low value relevance existence in the financial statements.

In the case of the carried out analysis at the level of the sample consisting of the Romanian listed companies, the results of the study show:

**1. the identification of the determining factors of the value relevance of financial statement and their systematization in two big components: *the financial position component and the financial performance component***

The use of the principle component analysis in the study is designed to identify the determining financial dimensions of the value relevance of financial statements and the removal of collinearity by excluding some variables. The graphic representation of the dominant variables' influence on the two financial components regarding the value relevance, specific to the BSE listed companies, is emphasized using the diagram in Figure 1.



**Figure 1.** The distribution of the variables in the system of the first two factorial axes

*Source: own peocessing in SPSS 20.0*

In the diagram in Figure 1, we can emphasize the obtainment of the two components regarding the value relevance of financial statements, determined based on the financial factors with significant influence on the stock return at the level of

the BSE listed companies. According to Figure 1, the first factorial axis represents the companies' financial position, analyzed based on the data in the balance sheet. The second factorial axis is featured by the companies' financial performance.

The econometric models based on which the values of the two financial components of the value relevance corresponding to the financial statements are reached are the following:

$$\mathbf{Component}_1 = 0.067 \cdot \mathbf{ROA} - 0.942 \cdot \ln(\mathbf{LF}) - 0.937 \cdot \mathbf{RIG} - 0.109 \cdot \ln(\mathbf{EPS}) + 0.769 \cdot \mathbf{PFR} + 0.839 \cdot \ln(\mathbf{RLG}) + 0.947 \cdot \mathbf{RAF}$$

$$\mathbf{Component}_2 = 0.782 \cdot \mathbf{ROA} + 0.105 \cdot \ln(\mathbf{LF}) + 0.024 \cdot \mathbf{RIG} + 0.830 \cdot \ln(\mathbf{EPS}) + 0.050 \cdot \mathbf{PFR} + 0.197 \cdot \ln(\mathbf{RLG}) - 0.047 \cdot \mathbf{RAF}$$

To identify the dependent variable (stock price or stock return), we considered the two known models used in the analysis of value relevance of financial statements: Ohlson (1995) and Easton & Harris (1991). The use of these two models stands at the basis of the development of the new econometric model: price model or return model. Starting from the correlation analysis of Holthausen and Watts (2001) regarding the existence of any relation between the financial ratios and the stock price or stock return, through the coefficient of determination, we tested which model explains the variation of the dependent variable the best. Thus, as  $R^2$  for the Easton and Harris model is higher than the one reached through the Ohlson model, the dependent variable used in the following empirical study is the stock return.

Considering the variables reached through the Multiple Correspondence Analysis, we firstly test the influence of the first axis variables, respectively of the second factorial axis, on the stock return, considering a linear relation between them. The reached regression models have the following form:

$$\mathbf{Model 1: SR} = 0.122 + 0.156 \cdot \mathbf{PFR} - 0.109 \cdot \ln(\mathbf{RLG})$$

$$\mathbf{Model 2: SR} = 0.083 + 0.167 \cdot \mathbf{ROA}$$

$$\mathbf{Model 3: SR} = 0.538 - 0.169 \cdot \ln(\mathbf{LF}) - 0.895 \cdot \mathbf{RAF} + 0.188 \cdot \mathbf{PFR} - 0.150 \cdot \ln(\mathbf{RLG}) + 0.182 \cdot \mathbf{ROA}$$

Comparing the coefficient of determination for the first model ( $R^2 = 4.10\%$ ) to the one in the second model ( $R^2 = 2.30\%$ ), we show that the significance of the information in the balance sheet against the ones in the profit and loss statement in the investors' decision making process. The third model includes the effects of the variables that are characteristic to the first factorial axis and the ones corresponding to the second factorial axis. Though, the 13.60% value of the coefficient of determination of this model is higher than the ones of the previous models, it still shows the need to include other relevant variables in the model needed for the decision making process of investors such as macroeconomic variables or other company-characteristic variables.

The strongest influence on the stock return is given by the return of assets and the financial autonomy ratio. ROA shows the accent investors put on the efficient management mode of the operating activity, on the compensation of the capital used in the company's activity. The inverse relation between the RAF and

the stock return can be explained through the fact that the owners of a company do not desire the distribution of dividends, but the distribution of the gained profit towards other destinations, such as provisions, whose growth lead to a significant financial autonomy. Not distributing dividends negatively influences possible investors that wish to place their available funds. A negative relation is also between the financial leverage and the stock return, showing the lack of attractiveness of the excessively indebted companies, which can lead to insolvability or even bankruptcy. PFR has a positive influence on the stock return emphasizing the significance investors give to the efficiency a company uses its operating capital to generate sales.

Moreover, starting from the affirmation according to which the investors' decisions are influenced by the performance of a company, determined, in turn, by the different elements existing in the regulation of each field, by the specific of the operating cycle, by the particularities of the products' lifecycles etc, the analysis of the value relevance of the activity field is useful to investors.

**a) *The analysis of the value relevance of activity field***

To evaluate the value relevance of the activity field, we consider two dummy variables, corresponding to the production (value 1 is specific to companies with manufacturing activities, value 0 is specific to companies that do not produce) and services (value 1 shows the services as activity field, value 0 shows the fact that the company does not provide services). The companies that are included in the trading activity field is considered a benchmark category. The regression model based on the financial ratios and the activity field has the following formula:

$$SR = 0.638 - 18.507 \cdot ROA - 0.206 \cdot Dummy_{prod} \cdot \ln(LF) - 0.206 \cdot Dummy_{prod} \cdot \ln(RLG) - 1.054 \cdot Dummy_{prod} \cdot RAF + 0.234 \cdot Dummy_{prod} \cdot PFR + 19.613 \cdot Dummy_{prod} \cdot ROA + 19.665 \cdot Dummy_{serv} \cdot ROA - 0.718 \cdot Dummy_{serv} \cdot RAF$$

Gained results show the significance of the stock return associated both to the production field and the services field. According to the identified significant variables, for the production field, investors also consider relevant the identified solvability (LF) and the liquidity (RLG) ratios. As for the production, the companies' activity supposes the existence of fixed and current assets with a correspondent in the owners' equity and liabilities. In the field of services, the operations are based more on the human factor and less on the needed material means.

**b) *The analysis of the value relevance of the audit report***

From the investors perspective, financial information cannot be always sufficient to the decision making process. Moreover, the increase of the investors' trust in the financial statements is made through the finished auditing services through auditing reports. The analysis of the audit report influence on the stock price or stock return is divided in the analysis of its content's impact, especially of the audit opinion, and on the auditor's analysis and namely the affiliation or not to the Big 4.

To verify this affirmation, companies in the analyzed sample are divided, on one hand, in companies whose auditor is affiliated to the Big 4 and companies outside the Big 4, and on the other hand, depending on the auditing opinion according to the International Auditing Standards (unqualified opinion, unqualified opinion with observations, qualified opinion, the impossibility of expressing an auditing opinion). Gained results are materialized in a regression model which also surprises the cumulated influence of the audited accounting numbers of a certain auditor (Big 4 or non-Big 4) and for which a certain audit opinion was issued, on the total stock return. The sign of the parameters also indicates the sense of the influence determined by the interaction between the financial variables and the dummy variables.

**Model 1:**  $SR = 5.559 - 7.708 \cdot RAF + 3.442 \cdot ROA - 0.498 \cdot \ln(RLG) - 5.217 \cdot OpFaraRez + 6.853 \cdot OpFaraRez \cdot RAF$

**Model 2:**  $SR = 5.743 - 7.605 \cdot RAF + 3.325 \cdot ROA - 2.200 \cdot Big4 \cdot PFR + 0.362 \cdot Big4 \cdot \ln(RLG)$

Din punct de vedere al auditorului și raportului de audit, doar opinia fără rezerve influențează deciziile investitorilor în sens negativ. Aceasta se datorează inexistenței de noi informații care pot influența fie viitoarele fluxuri de numerar, fie riscurile la care sunt supuși acționarii. Situațiile financiare anuale reprezintă o agregare a celor intermediare. În cazul celui de-al doilea model, rezultatele analizei indică următoarele: pentru firmele auditate de către auditori din Big 4, valoarea PFR determină o scădere a rentabilității totale a acțiunii, în timp ce o creștere a RLG, susținută și de un auditor din Big 4, determină o rentabilitate totală a acțiunii mai mare.

From the auditor's and the audit report's point of view only the unqualified opinion negatively influences the investors' decision. This is due to the lack of existence of new information that can influence either the future cash flows or the risks the stockholders face. Annual financial statements represent a quantum of the intermediate ones. In the case of the second model, the results of the analysis indicate the following: for the companies audited by Big 4 auditors, the PFR value determines a decrease of the total stock return, while a growth of the RLG, also supported by a Big 4 auditor, determines a higher total stock return.

### c) *The analysis of the value relevance of the stockholders' structure*

The ANCOVA regression analysis allows the estimation of the influence of the stockholders' structure (majority/minority, foreign/local, judicial/physical person – model 1) and the interaction between the financial and dummy variables (model 2) on the stock return. The reached regression models regarding the significant variables take shape in:

**Model 1:**  $SR = 0.179 \cdot \ln(LF) + 0.196 \cdot \ln(RLG) + 0.259 \cdot ROA + 0.149 \cdot PFR$

**Model 2:**  $SR = -0.291 + 0.176 \cdot RIG + 0.257 \cdot PFR - 0.345 \cdot RAF + 0.297 \cdot ROA + 0.135 \cdot \ln(RLG) - 0.182 \cdot Stockholder + 0.179 \cdot Stockholder \cdot RAF - 0.127 \cdot Stockholder \cdot PFR - 0.158 \cdot Stockholder \cdot RIG$

Both the first and the second model show that the independent variables explain the changes in the dependent variable with a trust of 95%. According to the second model, a significant influence is held by the stockholders' structure from the perspective of the stock hold by the stockholders (majority or minority). The values of the coefficients of the second regression function show that the existence of a stockholder with majority of stocks owned causes a decrease in the stock price. This situation is expected as a result of the control power on the company by the majority stockholder. Moreover, in this case, the trust on the reported financial information decreases. Potential investors pay less attention to the reported financial information, as it is expected that this reported information would serve to the majority stockholders' personal interest than to reflect an accurate image of the company's activity.

Based on the reached research results and on the regression models, general hypothesis 1 is validated, which supposes that: *at the level of the studied population, there is a series of financial indicators and non-financial factors with value relevance to investors.*

## **2. the identification of the nature of the existing relation between the information displayed in the financial statements and the stock return**

Though, nowadays, numerous studies use multiple linear regression or variance analysis in the analysis, there is no evidence that supports the hypothesis that the relation between the stock return and the financial information is a perfect linear one.

Starting from the variables resulting from the MCA, we have verified, for each variable, the relation type between them and the dependent variable, depending on the coefficient of determination and the associated Sig value.

Gained results in SPSS take shape in the **R<sup>2</sup>** coefficient of determination of 23.20%, which shows that the model explains approximately a quarter of the stock return variation. **F statistics** of 4.887 and the **Sig.** value of 0.001 involve the fact that the independent variables explain the variation of the dependent variable with a trust of 95%. The regression model is the following:

$$SR = 1,746 - 0,824 \cdot RAF - 0,301 \cdot [\ln(LF)]^2 - 0,073 \cdot [\ln(LF)]^3 - 3,133 \cdot RIG + 3,034 \cdot RIG^3$$

Compared to the linear regression model, it only presents the variables regarding the debt ratio and the financial autonomy ratio, which have a negative influence on the stock return. A similarity between the linear model and the one reached considering the relation between each variable dependent and the dependent variable, emphasize the lack of variables regarding the profitability. On an emerging market such as Romania, the possibility of manipulation of results is avoided by investors by not considering these elements.

Based on the research results reached at the level of the analyzed sample, general hypothesis 2 is validated, which supposes that: *at the level of the studied*

population, there is a stronger non-linear relation between the financial ratios that are obtained based on the financial statements and the stock return than in the case of a linear relation.

### 3. the estimation of the financial statements' value relevance given the condition of IFRS use

Imposing the financial statements reporting according to IFRS to listed companies represents an opportunity to compare the value relevance of these financial statements to the ones issued according to the national regulation. The analysis of the influence of adopting the accounting standards on the stock price has been made considering two equal samples. The two samples present the same companies, before and after the transition to the IFRS. To quantify this situation, we used a dummy variable ( $D_{\text{referential}}$ ).

To test the general hypothesis 3, data analysis implies the use of ANOVA. The use of this method is conditioned by the Levene test. Higher Sig values than 0.05 corresponding to Levene show the meeting of the homoscedasticity restriction, thus suggesting that the variations on the two groups are equal.

**Table 2.** Gained results after the use of unifactorial ANOVA

		Number of companies	Levene Test	Levene Test Sig.	F Test	Sig. (ANOVA)
RIG	OMFP 3055	106	0.072	0.789	1.544	0.215
	IFRS	106				
RAF	OMFP 3055	106	0.469	0.494	0.643	0.424
	IFRS	106				
ln(LF)	OMFP 3055	106	0.001	0.977	0.420	0.518
	IFRS	106				
ln(RLG)	OMFP 3055	106	0.017	0.897	0.486	0.487
	IFRS	106				
PFR	OMFP 3055	106	1.488	0.224	0.154	0.695
	IFRS	106				
ROA	OMFP 3055	106	0.810	0.369	0.419	0.518
	IFRS	106				
ln(EPS)	OMFP 3055	76	0.399	0.528	0.284	0.595
	IFRS	81				
SR	OMFP 3055	106	35.972	0.000	9.709	0.002
	IFRS	106				

*Source: own peocessing in SPSS 20.0*

The ANOVA displayed in Table 3, through Sig. values higher than 0.05, shows the fact that there are no significant differences between the average values of the considered ratios, reached through the use of the two accounting regulation (national and international). Though, average values of the stock return and of the Sig. statistics = 0.002 show that the stockholders' investment decisions can be influenced



by the transition to IFRS. The ANOVA test shows that not the financial information can make the difference regarding the stock return, but more, the advantages or disadvantages the IFRS can bring.

The analysis of the value relevance of reported financial information, given the use of accounting standards, is made through some econometric models.

**Model OMFP:**  $SR = 0.185 + 0.036 \cdot \ln(EPS)$

**Model IFRS:**  $SR = 0.521 - 0.153 \cdot \ln(LF) - 0.151 \cdot \ln(RLG) - 0.828 \cdot RAF + 0.199 \cdot PFR + 0.902 \cdot ROA$

The decrease of the coefficient of determination from 26.80% (before the IFRS implementation) to 12.6% (after the implementation of IFRS) shows the stockholders' and investors' lack of trust in the IFRS, into the benefits the IFRS bring along (transparency, the reduction of informational asymmetry and more accurate information). Though, significantly reduced values of this coefficient show that investors' decisions are not only based on the analysis of the analyzed ratios.

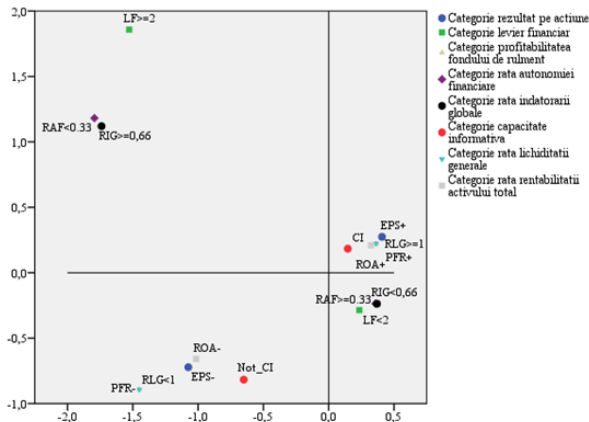
Compared to the situation before the use of Romanian accounting standards, when the investors focus themselves on the result a company obtains, after the implementation of the IFRS, the investors' attention is directed on the company's solvability and on the efficient management of the operating activity. The interest for these ratios is caused by the transition from the historical cost to the fair value. The objective is to provide investors with more accurate financial information. Thus, reported accounting information according to the IFRS will be less relevant than the ones reported according to the national standards.

Based on the obtained research results at the level of the analyzed sample, general hypothesis 3 is validated, which supposes that: *at the level of the population studied, the value relevance of financial statements, issued according to the international standards (IFRS) is higher than the one of the financial statements issued according to national standards.*

#### **4. the existence of a financial profile of a company whose liquidity, solvability and profitability ratios are considered to have significant value relevance**

This ranking of companies allows the use of multiple correspondence analysis. The use of this method takes shape in a descriptive analysis of the independent variables that are involved in the study, grouped depending on the two considered company categories (companies whose financial statements display value relevance and companies with financial information that do not significantly influence the stock return).

The diagrams in the following figures present the qualitative features of the companies with financial statements with significant value relevance, which have the role of shaping the profile of these companies.



**Figure 2.** The financial profile of the companies whose financial statements have value relevance to investors, at the level of the 2012-2013 reporting period

*Source: own peocessing in SPSS 20.0*

By synthesizing the results gained in the multiple correspondence analysis, the diagram in Figure 2 presents the general profile of a company whose financial statements have significant value relevance to investors, a profile obtained based on the associations between the financial liquidity, solvability and profitability ratios.

Based on the research results, which aim at the estimation of some descriptive statistics regarding the main financial ratios, for the companies whose reported financial information can influence the investors' decision, and the obtaining of a diagram which presents some associations between the values of the ratios that can signal the significant value relevance of financial statements, we can conclude that, at the level of the study, the general hypothesis number 4 is validated. Thus, *at the level of the studied population, by associating some financial ratios, we can reach the profile of a company whose financial ratios are considered to have significant value relevance.*

## 5. the reaching of a score function based on which we can classify the Romanian listed companies on stock performance groups

To analyze the impact of the financial information on the investors' decisions we will consider as a classification criteria of companies, depending on the stock return. This return can be, on one hand, positive, showing the growth of the investors' expectances regarding the reaching of some benefits by owning stocks of a certain company, and, on the other hand, negative, when the price of a stock is lower and the obtained dividends are lower than the considered price of the reference period.

The classification function is represented as a linear combination of the proposed ratios and has the following form:

$$Z_{\text{Perf}} = -6.461 - 13.552 \cdot \text{ROA}$$

The return on assets ratio has a positive influence, high values of these reports placing the companies in the category of the ones with positive stock return. For the discriminant function  $Z_{\text{Perf}}$ , we obtain two classification intervals of companies on stock performance groups, considering the values of the calculated minimum and maximum scores on the two categories:

- $-8,75 \leq Z_{\text{Perf}} < -7,20$  **high stock return;**
- $-7,20 \leq Z_{\text{Perf}} < -5,00$  **low stock return.**

Based on the research results obtained at the level of the analyzed sample, general hypothesis 5 is validated, which supposes that *at the level of the studied population, companies can be classified in different stock performance groups, based on an discriminant analysis.*

## **6. obtaining a function using the logistic regression analysis for the estimation of risk regarding the existence of low value relevance of financial statements**

The discriminant analysis (DA) allows the classification of the BSE listed companies in different performance groups, but the main inconvenience is the impossibility of the accurate determination of belonging to a certain category. Thus, to use the logistical regression analysis, we need a classification of companies depending on the relevance, respectively on the influence of the information in the financial statements on the stock return. We started from the normal distribution of the residual variable obtained through the regression model that shows the non-linear relation between the stock return and the reported financial information. To divide the analyzed sample in two approximately equal under-samples we considered  $Q_1$  and  $Q_3$  quartiles.

Subsequently to the processing of the data and the use of the logistical regression analysis, the obtained results are materialized in the obtaining of the pondering coefficients corresponding to the model. Significant variables that compete for the determination of the chances report are the *Financial Leverage*, the *Financial Autonomy Ratio* and the *General Liquidity Ratio*, with the following formula of the model:

$$\ln(p/(1-p)) = 1,485 \cdot \text{LF} + 7,586 \cdot \text{RAF} - 0,242 \cdot \text{RLG} - 5,347$$

or

$$p/(1-p) = e^{1,485 \cdot \text{LF} + 7,586 \cdot \text{RAF} - 0,242 \cdot \text{RLG} - 5,347}$$

According to this model, at an increase by an unit of LF, the probability of influencing the investors decisions regarding the stock return lowers the risk of having relevant financial statements with 341.40% (=100% - 4.424\*100%). The same influence is also held by RAF, while in the case of RLG, the increase by one percent of them causes the decrease of the probability of influencing the investors' decisions by 21.50%. As a result, the investors' decisions are influenced by the solvability and liquidity of the company which allows it to continue its activity and

compensate investors with dividends or by increasing the stocks' value as a result of profit reinvestment.

In the case of the Logistic Regression Analysis (LRA), information is provided regarding the accuracy of the right estimation of the chances that a company would be included in the right group from the perspective of the financial statements' value relevance based on the obtained model. According to Table 3, for the general model, of 120 observations, for 40 of them (66.7%) the correct chance of being ranked in the category of the companies whose information in the financial statements influences the investors' decisions are highlighted. Of the 60 companies whose information in the financial statements are not considered relevant, we correctly indicate the chance that they are included in the initial category for 24 of them (60.0%).

**Table 3.** Testing the accuracy of the general model obtained through the LRA

Observed		Predicted		
		Status		Percentage
		No value relevance	With value relevance	
Status	<i>No value relevance</i>	36	24	60,0
	<i>With value relevance</i>	20	40	66,7
<b>Global Percentage</b>		-	-	63,3

*Source: own peocessing in SPSS 20.0*

High values of these chances report express an accuracy of more than 50% of the general estimation model of the probability that the information in the financial statements would influence the investors' decisions.

Based on the research results and of the obtained logistic regression models, general hypothesis 6 is validated, which supposes that *at the level of the studied population, the risk of low value relevance of financial statements existence can be estimated based on the identified financial indicators.*

## GENERAL CONCLUSIONS

Like any scientific construct, this thesis pursues the reaching of the research objective, by respecting the rigor of a methodological demarche structured in well delimited phases. The first stage of this demarche takes shape in the founding of the financial market concept, through epistemic, taxonomic and methodological delimitations. In the second stage, we identify the main directions and approaches of the scientific research in the field, based on which the proposed hypotheses and objectives are set in the study. Based on the reached results, the developed hypotheses lead to the reaching of the research objectives, applicable both theoretically and applicative.

**The theoretical contribution** is firstly based on the ability of the thesis to provide an original perspective on the value relevance phenomenon, by advancing the knowledge in a way that is considered useful to users. Although it might be seen as an obsolete topic, from the perspective of the time spent from the issuance of the first studies based on the value relevance or the informational content of financial statements, though, the significance of stock exchanges with national or international activity supports the need to permanently identify new useful solutions for the investors' needs, which are in a continuous process of transformation.

From the epistemic, taxonomic and methodological perspective, the presentation of a conceptual framework, with clear benchmarks within the international dominant references, emphasizes the significance of the analysis of the relation between the financial information and the investors' decisions reflected by the stock price and stock return, at the level of the capital market.

By synthesizing the literature corresponding to the financial market, the paper theoretically focuses on *the clearing up of the main concepts met on the financial market* (financial instruments, stocks, stock return and risk), *on the identification of the factors that influence the stock return* which supports the foreseeing of future cash flows affiliated to the stock price (macro and microeconomic, financial and non-financial ones). The presented classifications, the identified financial and non-financial factors come to support, from the theoretical perspective, the understanding of the functioning method of the financial market and the decision making process corresponding to the investors on the stock market of listed companies.

The dominating references regarding the classification of factors emphasize the financial statements as the main mean of communication with the investors. This is according to the Conceptual Framework of the International Financial Reporting Standards which supports the significance of the provided information through the financial reports to investors when estimating the value of the reporting company, in order to estimate the future risk and profits. Moreover, *knowing, understanding and clearing up the value relevance of financial statement concept* (definitions and approaches, the identification of the main financial information in the financial statements, of the value creation theory, from the market, and the main non-financial information which can influence the investors' decision, the influence of international standards and of the national ones on the stock price and stock return,

the existing relation between financial factors and stock price) represent the starting point in the investors' decision making process which operates on the capital markets. The transposing of these proves on the Romanian business environment aims at the consolidation of the working methodology regarding the placement process of the available capital in the stocks of the listed companies.

The positive effects of globalization (the development of the Romanian capital market, the accounting harmonization, the free circulation of monetary capital) show the need to know the topic of the value relevance of the financial statements.

As for the research methodology identified at the level of the main specialty studies (used methods, techniques, variables and models) it also certifies the testing of its use for the Romanian capital market, through the Bucharest Stock Exchange. The variables analyzed in the study represent ratios that are calculated according to the financial-economic analysis and support the identification of the companies whose financial situations have significant value relevance to investors;

The analysis of the conceptual framework, through the empirical study, represents an original element of the thesis. Starting from a series of international scientific papers regarding the value relevance of the financial statements, the empirical study allows the identification of the international literature profile, thus identifying the future research directions through it.

This thesis, which analyzes the value relevance of financial statements, brings a plus of scientific value through the proposed methods, techniques and models which represent means that are within the reach of investors, useful to the identification of the factors that influence their decisions. Although the economic environment is featured by complexity, investors also need to know the main concepts that are used in the placement of the available capital (return-risk relation, the quantification modalities of risk and return) and of the main determining factors regarding the establishment of a balance between what are desired to be obtained and the corresponding risk.

The innovative and interdisciplinary feature of the thesis, by combining concept of accounting, financial-economic analysis, finances and statistics, support the analysis and evaluation of the value relevance of financial statements at the level of the capital market. The means that are specific to the statistical analysis allow the investors to develop their own analysis models.

From the researchers' perspective, the use of multivariate data analysis methods (the multiple correspondences analysis, the principal components analysis, the logistic regression analysis) in the analysis and evaluation of the value relevance of financial statements can complete the literature and open the road to new research directions.

**The methodological contribution** of the paper is, first of all, the result of the subjects that were selected for the analysis: the Bucharest Stock Exchange listed companies. Although the start of the value relevance of the financial statements analysis at the international level was carried out several decades ago, the continuous evolution of the financial environment regarding the stock exchanges, investors, trading companies, regulation, show the lack of sufficient knowledge of this topic, especially in the case of Romanian casuistry.

An essential feature of the research process and implicitly of the reached results aims at its validity. In order to build a true resistance pillar in the large scientific literature, the results, the working methodology, the formulated hypotheses and any other research element should meet the stiff requirements of scientific research.

A first element of the validation procedures aims at the theoretical structure in which we analyze the significance and accuracy of the obtained information compared to the identified scope, objectives and hypotheses. Once met the requirements, we compared the reached results to the results of other research studies in the field of the value relevance of financial statements. Existing differences can be caused by the nature of the collected data, by the chosen variables, the faulty used method or even by the human nature through the inherent values that can emerge. The literature can claim or deny the use of certain methods or techniques for certain cases.

From the methodological perspective, the paper emphasizes the possibility of also using multivariate statistical methods, mainly required by the bankruptcy risk analysis and less in the value relevance analysis of financial statements. At international level, research methodology is firstly based on the multiple regression analysis for the analysis of the relation between the investors' decisions (reflected by the stock price and stock return) and the reported financial information.

Thus, the multiple correspondence analysis has allowed the identification of a company profile whose financial statements are considered to have significant value relevance to investors, providing directions for the obtainment of a superior return. The multiple correspondences analysis has emphasized the existence of a company profile with significant value relevance also depending on the activity field.

Used in the practice, these profiles of the companies with significant value relevance allow possible investors to head for those companies and activity fields that can provide superior stock return.

The use of the principle components analysis has determined the selection of the financial ratios with value relevance to investors, thus identifying the main components of the financial statements that influence the stock return: the financial position and performance. Subsequently, the multiple regression analysis and ANCOVA have allowed the analysis of these ratios' influence and of non-financial information (the used accounting standard, the audit report, the stockholders' structure) on the stock return. The result took shape as the reached econometric models for the estimation of the value relevance of financial statements. Though, used methodology showed the fact that the non-linear relation between the reported financial information and the stock return is much higher than in the case of the linear one.

By using ANOVA, the value relevance is also analyzed from the perspective of the standardization organisms, by comparing the two accounting standards (national and international). We emphasized the existing differences between the two accounting standards reflected at the investors' level through the stock return.

The results reached by using the discriminant analysis and the logistic regression analysis is featured by the company ranking econometric models on categories regarding the value relevance of financial statements who quantify the

risk that financial statements might not be considered to have a significant value relevance to stockholders.

### **Operational contribution**

The scientific contribution of a thesis is firstly verified through its utility. Under the aspect of the direct operationalizing of the research results, we consider the integration of the proposed analysis and evaluation methodology of the value relevance of financial statements by the investors operating on the capital market in Romania. Investing in stocks of the listed companies represents a complex process firstly based on financial information.

As for the present thesis, the shaping of a company profile whose financial statements are featured by significant value relevance and the shaping of some companies' groups with relevant information to investors are meant to head the investor towards the first stage of the choosing process of the companies in which will place their available capitals. The practical utility also comes from the fact that proposed models can represent means capable of guiding investors through the capital placement decisions, by signaling the financial factors (reached based on the financial statements) and the non-financial ones, with value relevance to the stockholders.

### **Research limits**

The limits of the study are given by the relative low number of companies listed on the three categories of the BSE which were considered in the analysis. This is due to the transparency and financial reporting requirements. For example, Ou and Penman (1989) used more than 11.000 observations, compared to this study than uses approximately 120 observations. But this limit is given by the size of the Romanian capital market and implicitly of the stock exchange.

The low number of analyzed observations can determine the extension of the reached results at the level of the companies in Eastern Europe or at the level of the companies in the world that use the IFRS. Though, these reached results present the accurate image of what happens on the Bucharest Stock Exchange.

Considering the analyzed financial exercises, the effects of the financial crisis are still present in the financial exercise of 2012, determining the investors' reserve regarding the resource placement on the financial markets.

From the perspective of data processing, high attention must be paid to the choice of the best method of testing the set hypotheses and the reach of the initial objectives. As this phenomenon is not a static one, it must be considered a dynamic one, also considering the time factor through the panel analysis.

As for the factors that are considered to have value significance to investors, a low number of financial variables was included in the empirical study. Moreover, their number also gets lower through the principal components analysis. Compared to the financial variables, control variables only appear in the case of the analysis of the activity field, the analysis of the influence of the used accounting standard and in the case of the analysis of the audit report influence.



**Future research directions** pursue the extension of the study period or of the analyzed financial markets and the consideration of additional financial or non-financial, microeconomic or macroeconomic factors. The need of analyzing additional factors is also indicated by the value of the coefficient of determination that doesn't overpass 50%.

The identification of some trends and models in the analysis of value relevance at national level can be tested through other future regional studies, from South-Eastern Europe, at European or even international level. For comparability, the analysis must include a series of control variables to maintain a high level of research results validity.

Another future research direction now pursues the investor and less the listed companies, by shaping an investor's profile on the capital market in Romania. This is considered a difficult activity as individuals subjectively placed, providing information that they consider available for the research and not the information that expresses the reality or they can be reserved regarding answering the survey.

### ***References:***

To achieve the thesis, a series of references was consulted, represented by books, treaties, monographs, scientific articles, regulations, reports of profile institutions etc., in the Romanian and foreign literature (79 books and monographs and 299 scientific articles).

## Dissemination of research results

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1. Jaba, E., Mironiuc, M., Roman, M., Robu, I.-B., **Robu, M.-A.** (2013), *The Statistical Assessment of an Emerging Capital Market Using the Panel Data Analysis of the Financial Information*, Economic Computation and Economic Cybernetics Studies and Research, Vol. 47, No. 2, 21-36.

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