

Study of the congruence between accounting numbers and stock market variables through comprehensive income: Empirical evidence for Romania companies quoted on the regulated market

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Abstract: This research is a hypothetical-deductive study whose purpose is to analyse if, in the case of non-financial companies quoted on the regulated market of the Bucharest Stock Exchange, the reporting of the information on Comprehensive Income is relevant for the investors. The present paper also aims to identify several degrees of value relevance for Comprehensive Income, in direct correlation with the informational value of certain stock return indicators for the investors. For the analysed population and for the time horizon taken into account, we noticed that Other Comprehensive Income per Share, the variance of Other Comprehensive Income per Share and the Differences from the revaluation of tangible and intangible assets in relation to the investment per share are expressive predictors for the investors on the financial market. The ranking of the effects of reporting the information on Other Comprehensive Income expresses the most visible relevance in Goodwill Per Share, then in the Share Price and, thirdly, in Total Shareholder Return.

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1. Introduction

Investors are characterised by prospective thinking and decisions based on predictions. These often require a large volume of information extracted from the market, which are often random and may lead to forecast errors. The financial market studies, concerned with explaining the unpredictability and volatility of stock results, with proving the well-functioning of the free competition markets, with anticipating the behaviours of the big players who can influence the market, etc. consider transparent, comparable, and relevant information to be a condition for the well-functioning of financial markets. The transaction volume and return volatility have one variable in common, which is the "information flow" (Fama, 1991).

The effort of international bodies to normalise accounting, including by launching the "all inclusive" financial performance reporting system, is an answer to the investors' requirements concerning the relevance and credibility of the financial information communicated to the market. At the same time, specialised literature started to abound in studies that analyze the influence of the application of the IFRS on enhancing the association between accounting and stock market variables.

Our research is different from those of other authors in two ways. First of all, unlike other studies, when looking at the relevance of reporting the Comprehensive Income, it takes into account its structural elements (Earnings per Share, Other Comprehensive Income per Share, and Differences from the revaluation of tangible and intangible assets, as an important element in the composition of Other Comprehensive Income). We consider that their different nature and the different accounting treatments which lay at the basis of their determination and evaluation may lead to interesting conclusions.

Second, specialised literature mentions that the relevance of reported financial information can be studied taking into consideration either the share price or the stock returns. However, stock returns may be examined through several indicators, each having different value relevance for the investors. That fact prompted us to ask: to what extent investors perceive the relevance of comprehensive income reporting? Is it possible to identify the indicators over which comprehensive income transmits its influence more evidently and do these indicators have the best informative value for investors? In order to find the answers, we firstly analysed

the specialised literature as a basis for configuring the research hypotheses. Then, we tested these hypotheses and validated them through an empirical study, according to a specific methodology described.

In addition, our paper is included in the stream of literature that investigates the consequences of the IFRS adoption in an Eastern-European country, with a less developed capital market and an original process of the IFRS implementation. This setting promises some interesting results. Our findings show that investors on the Romanian capital market deem comprehensive income as a predictor used in their investment decisions. Moreover, due to the innovative information provided by the comprehensive income, investors find it more value relevant than other traditional measure of market performance: earnings per share.

The rest of the paper is organized as follows: section 2 deals with the literature review and the development of the 2 research hypotheses, section 3 describes the research methodology, while section 4 discusses the results. Section 5 concludes the paper.

2. Literature review and research hypotheses

The development and internationalization of the financial markets resulted in the need to regulate accounting at an international level, so that the contents of the reported financial information is directed towards, and meets the expectations of the investors as portfolio managers.

The reconsideration of the concept of performance, through the imposing by the American standard-setter (FASB), and later by the international standard-setter (IASB), of the concept of «extended performance», lead to the polarisation, in specialised literature, of the pros and cons. Burlaud and Colasse (2010) stress the fact that financial information is meant for a nomad investor, susceptible to sell his securities on the market at any moment, so as to maximise his earnings. He needs therefore a way to instantaneously measure returns at the market price, hence the reason for introducing the concept of "fair value", whose frequency of usage accelerated the implementation of the concept of "*all inclusive*" income (*Comprehensive Income*) (Le Manh, 2012), appeared explicitly in the IFRS referential only in 2007 (Frendzel & Szychta, 2013; Achim & Borlea, 2014). Hendrikson (1998) argued in favour of the superiority of *Comprehensive Income* over the net income, since the former allows a perfect articulation of the balance sheet and of the income statement, representing the deviation between variations of shareholders' equity throughout the year, measured at the market value.

Colasse (2009) believes that, paradoxically, the IFRS referential focused exclusively on the information needs of the investors is, in itself, a factor of instability of financial markets and especially of enterprises, viewed as economic and social entities. Müller *et al.* (2011) adhere to the opinion of the authors who consider that the comprehensive income is not the best way of evaluating performance, since *Other Comprehensive Income* is seen as a “black box” that includes complex elements, resulted from the application of different accounting standards. This indicator, which includes the net income as well as the *Other Comprehensive Income*, is also criticised, just like the conceptual framework that promoted it, for originating exclusively from the *Value Theory* and for being too remote from performance defined in the perspective of transactional theory (Vidal & Giordano-Spring, 2012).

In value theory, the concept of result, focused on measuring the return on investment for the shareholders, prevails over all the other approaches concerning performance. The value created for the shareholders results, according to the same theory, from the increase in the value of the assets portfolio. Any asset is assimilated to a financial asset, whose actual value is that of the cash-flows expected to be generated by it, taking risk into account. Only the actual value is considered to be a relevant measure for the fair value of the assets (Giordano-Spring & Lacroix, 2007). In this context, the periodic revaluation of the assets, by reference to market or by estimating future cash-flows, may create value and may generate benefits. Fair value introduces a new logic in the reporting of performance, based on market values, which are volatile and virtual, which combined with the discounting technique, with the choice of the discounting ratio and with the predictions of cash flows, increase earnings volatility. Unprofitable entities may be tempted to abusively recognize or to over-estimate unrealized earnings.

In transaction theory, the only relevant source of performance is the result of the increase of the production capacity between the beginning and the end of the fiscal year, or the commercial transactions between the business partners. Accounting data has the role to measure the efficiency of the production activity, the durability and growth of the entity, considered to be an expression of its financial health. This is an approach in terms of preserving physical capital, on which the existence of profit depends. The rise of the asset price or the revaluation differences are considered as simple adjustments for preserving physical capital which, in this view, does not represent profit (Giordano-Spring & Lacroix, 2007).

Choosing a priority recipient for the reporting of financial information shows that, when creating the conceptual framework of accounting, IASB referred to the agency theory and to the theory of efficient markets. According to the agency

theory, managers – who are in a contractual relationship with the shareholders – are mandated to maximise the value of the capital invested by the shareholders, which requires aligning the managers' actions with the shareholders' interests. The shareholders are tempted to exert their power on the managers through the financial markets, tightly linking the managers' salaries to their own gains. According to the market theory, they react to the information published by the entities, which is why often times managers are inclined to develop financial communication means that exceed simple information (Colasse, 2009).

From this derives the importance of accounting norms for insuring the relevance of the information communicated to the markets. The publication of the *Comprehensive income* is included in the objective to reduce informational asymmetry (Le Manh, 2012). Several valences of this indicator are acknowledged, among which the possibility to circulate information over and above the net income. Therefore, *Comprehensive income* can simultaneously stress the performance for which the management is liable to the shareholders (Net Income) as well as *Other Comprehensive Income* (the performance resulting from owning assets, whose price may go up or for which future cash flow is expected) (Müller *et al.*, 2011; Barbe & Didelot, 2013). *Comprehensive Income* is reflected in the statement of comprehensive income, which symbolises the process through which accounting becomes financial, favourable to a more direct evaluation of the assets by the investors (Aglietta & Rébérioux, 2004; Ramond *et al.*, 2007), without leaving out the effects of economic transactions.

The debates derived from the need to know any possible differences brought on the financial market by the standard-setters' requirements to report financial performance, have generated an abundant literature on the topic of value relevance. The concept of *value relevance* is seen from the perspective of the two qualitative features attributed by the international standard-setter to the reported financial information, respectively relevance and faithful representation. Measurement of the value relevance of the financial information communicated to the financial market is done through the correlation and regression analyses between the share prices or indicators that express stock exchange returns and the main income categories. Value relevance researchers believe that accounting information plays a key role in reflecting the earnings through price changes or the economic value through price levels (Huian *et al.*, 2014).

In what concerns the *value relevance studies* through the perspective of comprehensive income, we can distinguish two types of researches in the North-American or European context: some drawn based on reprocessing the data published before the obligation to report *Comprehensive Income* existed and others based on the data actually published on *Comprehensive Income* and on the

elements that trigger it. Thus, Cheng *et al.* (1993) analysed the ability of operating income, net income and comprehensive income to influence stock exchange profitability. The authors draw the conclusion that the most intense correlation was identified between operating income and stock exchange profitability, while the components of comprehensive income are weakly correlated with the same variable.

Skinner, 1999 notices that most empirical studies fail in proving the superiority of *Comprehensive Income* as a relevant indicator for investors. Investors are interested in cash flow predictions and, in Skinner's (1999) opinion it is unlikely for the *Other Comprehensive Income* to facilitate its forecasts. Cahan *et al.* (2000) show that *Comprehensive Income* is more significantly correlated with stock exchange profitability than *Net Income*, on this basis attributing a greater value relevance to *Comprehensive Income*. Holthausen and Watts (2001) develop studies that empirically validate the hypothesis of the standard-setters, according to which comprehensive income is a relevant performance indicator, even better than other income indicators. On a sample of 92 Australian companies, for the period 1988-1997, Brimble and Hodgson (2007) deduce that *Comprehensive Income* is less correlated with stock exchange profitability than net income.

Kanagaretnam *et al.* (2005) prove the relevance of *Other Comprehensive Income* not included in the net income, which is positively correlated with stock exchange profitability, and conclude it is relevant. Biddle and Choi (2006), without questioning the relevance of comprehensive income, claim nevertheless that net income remains the best explanatory variable for the managers' gains. Ramond *et al.* (2007) performed a comparative study on two samples of quoted companies – French and British – noticing that the three income categories (net income, operating income, and comprehensive income) are significantly associated with stock exchange profitability, but the *Comprehensive Income* is more weakly correlated than net income. Comprehensive income is, according to this author, the product of the lobbying activities performed by the accounting normalisation bodies. Wang *et al.* (2006) get similar results using a sample of Dutch companies for which they reconstituted the *Other Comprehensive Income*, for the period 1988-1997.

Numerous studies are interested in the relevance for investors of the Differences from the revaluation of tangible and intangible assets as a structural element of *Other Comprehensive Income*. Thus, Cormier (2009), referring to the results of the studies by the authors Barth and Clinch (1998), mentions several significant conclusions: the positive and significant connection between the revaluated intangible assets and stock exchange profitability; the weak correlation between the revaluated tangible assets and stock exchange profitability; the revaluation

performed by evaluators who are independent from the company has no influence in what concerns the relation between the revaluated assets and the and stock exchange profitability, since there are no suspicions of accounting manipulation in this regard; favourable differences from the revaluation of the assets are positively associated with future performance, expressed through the operating income or through operating cash flow. Kang and Zhao (2010) empirically confirm that the elements that make up *Comprehensive Income* show a more significant value relevance for financial investors than the indicator taken as a whole. Mironiuc *et al.* (2015) empirically analyse the value relevance of comprehensive income in comparison with net result for the population of Romanian companies quoted on a regulated market, and confirm the significant connection, of a similar intensity, between the two categories of result and the share price.

The research on the relevance of comprehensive income reporting should also focus on the environment in which the IFRS implementation is made. After the fall of the communism, there were three attempts to implement IFRS in Romanian accounting. According to Ionaşcu *et al.* (2014), two of them were generated by the requests made by international bodies, such as International Monetary Fund, World Bank and European Commission, as part of the financial agreements contracted by Romanian authorities over the years (th first attempt coincided with the beginning of the new millenium and was not a very sucessful adoption, the last attempt was made in 2012). The other attempt was induced by the EU adhesion and concerned the consolidated accounts of the listed groups. Stakeholders' expectations regarding the consequences of the IFRS adoption revealed, according to Săcărin (2013), a strong belief that the quality of accounting information would increase.

Taking into account the debates in specialised literature and looking for a consensus concerning the ability of the *Comprehensive Income* to show its relevance to the investors on the financial market, we aimed to test the research hypotheses below on Romanian non-financial companies that are quoted on the regulated market:

H₁: *There is a connection of measurable intensity between Comprehensive Income and stock return.*

H₂: *For investors, there are several degrees of value relevance of Comprehensive Income, in direct correlation with the informational value of certain stock return indicators.*

3. Research methodology

The analysis of research concerns in the field of accounting reveals the intensification and abundance, in the last decade, of the studies that evaluate the ability of reported financial information to influence the decisions of the investors on the capital market. Thus, we can speak of "value relevance literature". Some authors, based on the methodology used to prove the value relevance, classify these researches into the category of "incremental association studies" or "relative association studies" (Holthausen & Watts, 2001). Starting from the diffused econometric models designed by Ohlson (Ohlson, 1995; Lo & Lys, 2000) and Easton and Harris (Easton & Harris, 1991; Barth *et al.*, 2008; Filip & Raffournier, 2010), we adhere to the trend of these research and suggest several models that integrate, into linear regression equations, variables that, in our opinion, could characterize the extent to which the *Comprehensive Income (CI)* provides relevant information to financial investors.

3.1 Discussion of the variables

In direct connection with the objectives of the present research, in an intuitive logical approach, we selected the indicators (dependent variables) that analyze and quantify the value relevance of the Comprehensive Income, and of the elements that determine it (independent variables). Thus, the Share Price, the Goodwill per Share, and the Total Shareholder Return are the dependent variables, whose values will reflect the influence of the independent variables synthesized in *Table 1*. The variable selection was based on several reasons, described below.

Table 1. Numerical variables included into the analysis

Numerical Variables	Computing method
Share Price (P)	-
Goodwill Per Share ($GWPS$)	Share Price - Book Value Per Share
Total Shareholder Return (TSR)	Capital Gains Yield + Dividend Yield
Earnings Per Share (EPS)	Net Income/Number of shares
Other Comprehensive Income Per Share ($OCIa$)	Comprehensive Income Per Share - Earnings Per Share
Comprehensive Income Per Share in relation with the investment per share (CIa / P)	Comprehensive Income Per Share/Share Price
Earnings Per Share variance in relation with the investment per share ($VarEPS / P$)	$(\text{Earnings Per Share}_t - \text{Earnings Per Share}_{t-1}) / \text{Share Price}_{t-1}$

Numerical Variables	Computing method
Other Comprehensive Income Per Share variance in relation with the investment per share $(VarOCIA / P)$	$(\text{Other Comprehensive Income Per Share}_t - \text{Other Comprehensive Income Per Share}_{t-1}) / \text{Share Price}_{t-1}$
Differences from the tangible and intangible asset revaluation per share in relation with the investment per share $(RRSa / P)$	Differences from the tangible and intangible asset revaluation Per Share /Share Price

Barth *et al.* (2001) state that the *Share prices* are “real interesting variables” for the study of the value relevance of the financial information communicated to the investors, with the condition for the markets to be efficient and representative in terms of transaction volume and liquidity.

Beyond this statement lies the fact that, in what concerns the value relevance, the *Share prices* (P) have instantaneous visibility for the investors, issuers, and stakeholders. They are the expression of the decisions of the investors who know the market conditions (profitability, risks, the growth ratio for the sector or for the industry, etc.) and their impact on the entities towards which they decide to direct their investment. Nevertheless, the *market share prices* do not include only information on the real performance of the quoted entities, but all the public information available, and show, through volatility, the reaction to the good or bad news that arrive on the market, thus providing details on the market psychology. As we mentioned earlier, the relevance of stock prices is determined by the liquidity of the securities and, implicitly, of the financial market. The analysis of the stock price of a security that is not subject to transactions is irrelevant and does not guide the investor in the direction of maximizing the profit opportunities.

The *Goodwill per Share* ($GWPS$) is an indicator based on the criterion of value. Specialised literature points out that this indicator has a lower instantaneous visibility for the investors on the financial market than the Share Price or than other stock exchange indicators that express growth (for example, Earnings Per Share). $GWPS$ is an indicator that requires more depth in interpretation, bearing significance for the issuers interested in increasing the profit and for the investors who wish to better understand the perspectives of the activities in which they invest, including through the perspective of intangible capital.

From a financial viewpoint, $GWPS$ is the positive difference between the Share Price and the theoretical Book Value per Share. The surplus thus resulted reflects the positive perception of the investors concerning the perspectives of the issuing entity, and thus upon purchasing the financial asset, the investors accept to pay

more than its mathematical value. This way, the investor also acknowledges the value of intangible capital (human capital: competences, skills, intellectual agility; structural capital: relational, organisational, related to renewal and development), which has not fulfilled the conditions of evaluation and acknowledgement in the financial statement, but which will enhance its expected returns or which, in conditions of financial difficulties, will concur to preserve a positive result and shareholders' equity. The value inferiority of the Share Price in relation to the Book Value per Share expresses immediate value losses (*Badwill per Share*), that are reflected in under-quoted or de-quoted financial securities, for which the investor offers less than the theoretical value of one share.

GWPS is the equivalent in absolute values of a Price to Book Ratio higher than one, also called the multiple of shareholders' equity. The Book Value Per Share is the consequence of the manner in which the entity's activity was managed, of past accounting results and of the relationships with the shareholders, while the share price is the expression of the predictions concerning future returns, which, in case they are not higher than the return expected by the shareholders, will be recorded in an increase of the Book Value. No industry can be characterised on the long term by a share price inferior to the Book Value per Share, since strategy reconfigurations come into play, leading to re-establishing the balance specific to efficient financial markets. The opposite is also not true on the long term, since new equities may become attractive for the investors, which triggers a drop in the abnormally high share price and a re-establishment of the balance of efficient markets.

Total Shareholder Return (TSR) is a more sophisticated value indicator, based on the idea that an investor who bought shares at the beginning of the period and was paid through a Dividend Yield reinvests a part in acquiring new shares, and at the end of the period evaluates the portfolio according to the last share price. Thus, this indicator reflects the global return on investment for an investor who may gain from the *Dividend Yield*, as well as from the appreciation in time of the share price (*Capital Gains Yield*). This indicator includes an element of dynamics in the evaluation of the global return on investment, by taking into account the appreciation of the share price. The growing interest for reinvestment is associated with the anticipation of the share price increase, just as the growing interest for cashing in dividends anticipates, in certain conditions, depreciations of the share price.

In selecting the independent variables, we started from the significance of the Comprehensive Income in the *clean surplus* approach, according to which the net income together with the variances of the shareholders' equity, less those determined by transactions with the shareholders (*Other Comprehensive Income*),

define the *Comprehensive Income* (Mironiuc *et al.*, 2015). Therefore, the independent variables included in the models suggested for testing the research hypotheses are Earnings Per Share and Other Comprehensive Income Per Share, as determinants of the *Comprehensive Income* (*Models 1* and *2*). Also, starting from Easton and Harris' model and in order to introduce the dynamics component into the analysis, we selected the following independent variables: Comprehensive Income Per Share in relation with the investment per share, the Earnings Per Share variance in relation with the investment per share, and the Other Comprehensive Income Per variance in relation with the investment per share (*Model 3*). The indicator Differences from the revaluation of tangible and intangible assets per share in relation with the investment per share is the last independent variable selected (*Model 4*), since among the components of Other Comprehensive Income, this one predominates, while the other components are missing or they are observed in an insignificant number of cases.

The independent variables belong to the category of indicators that reflect growth (*EPS*, *OCIa*), and their link with value indicators is achieved through the Share price, thus resulting in indicators that express the return expected by the shareholders as a result of the capital invested per share (*P*), for which a specific return per share was predicted (*Cla/P*, *VarEPS/P*, *VarOCIa/P*, *RRSa/P*).

3.2 Data source and features of the analysed population

The present study is performed on the population of 63 non-financial entities quoted on the Bucharest Stock Exchange, on the regulated market. The analysis period was limited to two fiscal years (2012, as the first year when this category of entities apply IFRS, and 2013), thus resulting a number of 126 observations. Manufacturing entities predominated with a percentage of 73% (92 observations), 20.6% are entities activating in services (26), 4.8% of the total population is accounted by entities belonging to the constructions field (6), and 1.6% includes commercial entities (2). The data was collected in a mediated manner, from the individual financial statements and from the reports provided for information by the web pages of the observed entities. Data processing was performed using the *Statistical Package for the Social Sciences*, version 20.0.

In order to facilitate the interpretation of the research results and before studying in detail the structure of the variables that will provide contents for the suggested models used to test the research hypotheses, we characterize the selected population from the perspective of the main elements that determine the comprehensive income: Net Income and Other Comprehensive Income (*Figure 1*).

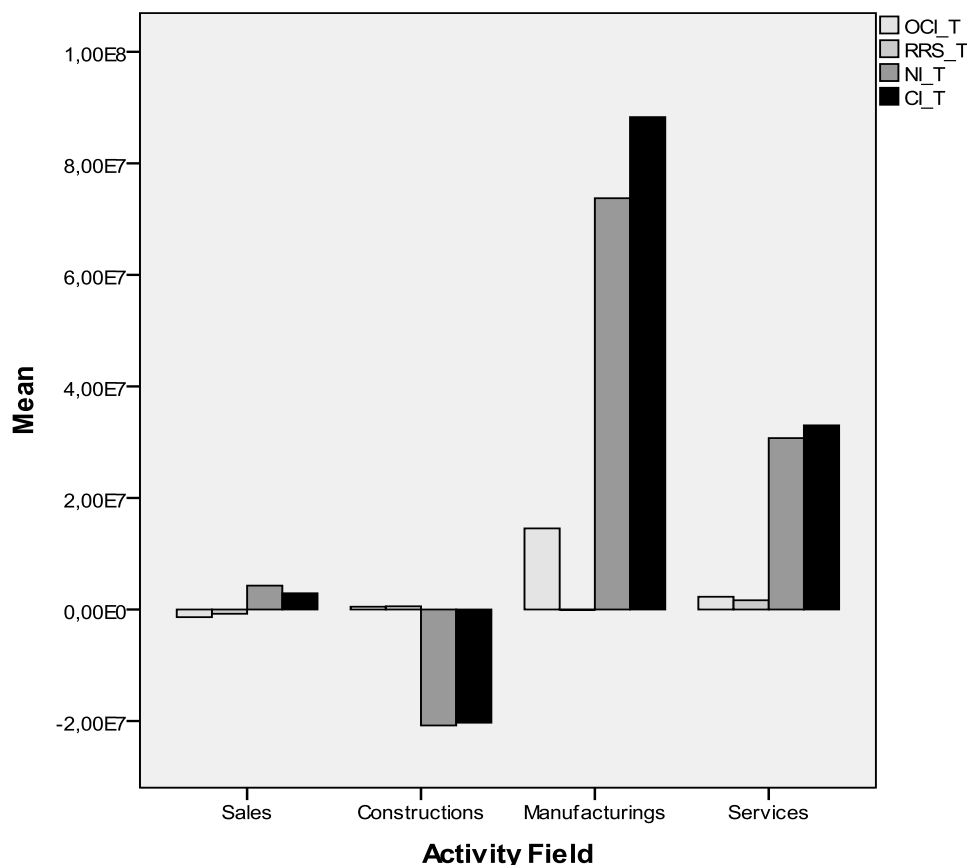


Figure 1. Value contribution of the elements composing the Comprehensive Income, per activity field, for the period 2012-2013

The comparative analysis of the information that describes the composition of Comprehensive Income per industry included into the analysis and the amplificatory or erosive effect of Other Comprehensive Income on Net Income leads us to interesting conclusions. For the entities performing in sales industry, we notice that the Other Comprehensive Income is negative, almost entirely represented by Negative differences from the revaluation of the tangible and intangible assets, eroding 52.62% of the net result and leaving the Comprehensive Income positive but lower than Net Income. For the entities belonging to the field of constructions, the Comprehensive Income has negative values, since Net Income, which predominates in its structure (100.20%) represents a loss, slightly reduced (by 0.198%) by the positive value of the Other Comprehensive Income. Of all the elements that form the Other Comprehensive Income, only Differences from the revaluation of tangible and intangible assets have positive values. They

contribute with 10.17% to Comprehensive Income, while the other elements represent unrealized losses that diminish the value of Other Comprehensive Income and, implicitly, of Comprehensive Income.

For the manufacturing entities, Comprehensive Income is positive on the average, since 54.84% of its structure is made up of Net Income, significantly amplified (by 45.16%) by Other Comprehensive Income. As a general trend, the manufacturing sector is characterized by significant weights of the tangible assets in the structure of the total economic resources, which explains the percentage of 31.05% with which it participates in Differences from the revaluation of tangible and intangible assets in the composition of Comprehensive Income.

The entities activating in services are characterized by positive Comprehensive Income, as an expression of the participation with 83.88% of Net Income in its composition (the percentage of 3.85% was not taken into account, which corresponds to the elements reversed to Net Income) and of the contribution of 12.27% of Other Comprehensive Income. The Differences from the revaluation of tangible and intangible assets, just like in the other industry, represent the major element of Other Comprehensive Income and enhance Net Income.

For the total population, we can summarise the following observations: for 56 entities (44.40%), no unrealized gains or losses were recorded, which would directly affect the shareholders' equity and eventually generate Comprehensive Income; for 22 of the analysed entities, we noticed that the Net Income is amplified by Other Comprehensive Income; 11 observed entities are about to diminish their accounting loss due to the favourable influence of Other Comprehensive Income; in 3 cases, the negative Net Income becomes profit under the influence of the elements that provide contents for Other Comprehensive Income; for 18 entities, the Net Income is eroded by Other Comprehensive Income, with the Comprehensive Income still positive; in 9 cases, the loss is enhanced as an effect of the unfavourable influence exerted by Other Comprehensive Income; for 7 entities, Other Comprehensive Income transforms the positive value of Net Income into negative Comprehensive Income.

Therefore, in 28.60% of the 126 observations, the distinct reporting of Other Comprehensive Income that enhances Net Income could be a positive signal for the potential investors on the financial market. Also, for 27% of the observations, the reporting of a Comprehensive Income diminished by the unfavourable influence of Other Comprehensive Income could inspire reflections and prudence in the decision to invest.

3.3 Methods for data analysis and proposed models

The dependencies between the analysed variables, mentioned in the research hypotheses and initially identified in a logical-intuitive manner, are tested using correlation and regression analysis. The study of the meaning and intensity of the statistical connections between the numeric variables is performed using *Pearson's correlation coefficient* and *Pearson's correlation ratio*. At the same time, the evaluation of the degree to which the dependent variable is explained through significant independent variables was performed through a multiple linear regression analysis. In order to select the variables that best explain the influences on the dependent variable, we resorted to the *Stepwise* method, which introduces and eliminates the independent variables in the regression equation, according to the degree of significance of their connection with the dependent variable (Jaba & Grama, 2004). *The Fisher F test statistics* and the *Student t test statistics*, whose values result from an ANOVA analysis, are used in this paper in order to test the suggested regression model. The study of the co-linearity between the independent variables requires interpreting *Tolerance* and the *Variance Inflation Factor*.

The suggested models are circumscribed to the general expression $Y = f(X_1, X_2, \dots, X_n) + \varepsilon$ and use the variables detailed in *Table 1* where *Share Price* (P_t), *Goodwill Per Share* ($GWPS_t$) and *Total Shareholder Return* (TSR_t) are the dependent variables (Y) relative to the next period (the first semester „ t ”) of the one for which the independent variables were determined (the end of the previous fiscal year „ $t-1$ ”), in order to be able to analyse the consequence of *value relevance* on the resulting variables. β_i are the coefficients of the regression equation that measure the change of the dependent variable under the influence of the independent variables (X_i) taken into account. The residual variable (ε) sums up the influence on the dependent variable by other variables than those included in the model. The following equations represent the expression of the models designed to test the research hypotheses:

$$\ln_P_t = \alpha_0 + \beta_1 \cdot EPS_{t-1} + \beta_2 \cdot OCIA_{t-1} + \varepsilon \quad (1)$$

$$\ln_GWPS_t = \alpha_0 + \beta_1 \cdot EPS_{t-1} + \beta_2 \cdot OCIA_{t-1} + \varepsilon \quad (2)$$

$$\ln_TSR_t = \alpha_0 + \beta_1 \cdot CIA/P_{t-1} + \beta_2 \cdot VarEPS/P_{t-1} + \beta_3 \cdot VarOCIA/P_{t-1} + \varepsilon \quad (3)$$

$$\ln_TSR_t = \alpha_0 + \beta_1 \cdot CIA/P_{t-1} + \beta_2 \cdot VarEPS/P_{t-1} + \beta_3 \cdot VarOCIA/P_{t-1} + \beta_4 \cdot RRSa/P_{t-1} + \varepsilon \quad (4)$$

4. Results and discussions

The information presented in *Table 2* describes the situation of the observed population, mainly through the mean values of the variables suggested for the evaluation of the value relevance of Comprehensive Income.

Table 2. Descriptive statistics within the analysed population

Variable	N	Mean	Std. Deviation	Minimum	Maximum
P	126	6.1721	25.4708	0.01	195.00
GWPS	32	-3.3375	14.0054	-83.93	27.92
TSR	126	0.7606	2.79724	.00	21.29
EPS	126	.6822	3.7670	-1.74	28.11
OCi_a	126	.0817	.3783	-.83	3.07
CI_a/P	126	-.2181	2.1373	-17.11	13.14
VarEPS/P	126	-.1035	3.4164	-32.57	17.20
VarOCi_a/P	126	.4254	3.1314	-1.17	26.39
RRSa/P	126	.0606	.3414	-.49	3.06

According to data in table 2, the mean of the share price for the entities that form the population is, for the analysed time frame, equal to 6.17 lei/share. Extreme variances compared to the mean are significant. The value of the shares is under evaluated on the market in comparison with their mathematical value, for a mean of 3.3375 lei/share. For the actors on the financial market, this is a signal to buy. Total Shareholder Return shows that, on the average, an investor may gain 0.7606 lei per share owned of the Dividend Yield and due to their Capital Gains Yield.

The mean net income per share is 0.6822 lei for the population, with significant deviations from the mean (28.11 lei/share). The drop of this indicator, combined with a positive mean of the share price, determines a negative mean result of the investment per share (0.1035 lei/share). The positive mean of Other Comprehensive Income per Share, equal to 0.0817 lei/share, indicates the value that increases the Earnings per Share, determining the Comprehensive Income per Share. The mean returns corresponding to the investment per share (*CI_a/P*) indicates a loss suffered by the investor in the shares of the entities in the population. Taking into account the fact that, in dynamics, the mean Other Comprehensive Income per Share has an ascending trend, the ratio *VarOCi_a/P*, equal to 0.4254 lei/share, expresses the favourable influence of Other Comprehensive Income per Share on the result expected by the investors. The mean value of the Differences from the revaluation of tangible and intangible assets corresponding to the investment per share indicates that this component of

Other Comprehensive Income per Share participates to the earnings from the investment per share with 0.0606 lei/share.

Specialised literature mentions, as a specificity of the financial data series, the fact that they are not distributed according to a normal law, as vast deviations of the extreme values are noticed when compared to the mean. In the case of our data as well, the initial testing of the normality conditions of the distribution of the variables implied computing logarithms of the dependencies ($Ln_P_t, Ln_GWPS_t, Ln_TSR_t$) included in the suggested models.

Pearson's correlation coefficients reveal (*Table 3*) the existence of direct correlations, moderated in intensity, between the dependent variables (Share Price, Goodwill per Share) and the independent variables (Earnings per Share, Other Comprehensive Income per Share) inserted in *Models 1* and *2*.

Table 3. Test of the significance of the correlations between the variables

Pearson Correlation		EPS	OCIA	CIa/Pt	VarEPS/Pt	VarOCIA/Pt	RRSa/Pt
<i>Ln_P</i>	1	.500**	.343**	-	-	-	-
Sig. (2-tailed)		.000	.000	-	-	-	-
N	126	126	126	-	-	-	-
<i>Ln_GWPS</i>	1	.500**	.343**	-	-	-	-
Sig. (2-tailed)		.000	.000	-	-	-	-
N	32	32	32	-	-	-	-
<i>Ln_TSR</i>	1	-	-	.277**	.171	-.229*	.324**
Sig. (2-tailed)		-	-	.002	.056	.010	.000
N	126	-	-	126	126	126	126

** . Correlation is significant at the level 0.01 (2-tailed).

* . Correlation is significant at the level 0.05 (2-tailed).

Between the variables of *Models 3* and *4*, the correlations are direct and weaker. The correlation is reversed only between the Total Shareholder Return and the Variation of Other Comprehensive Income per Share. The values of the significance levels (Sig. between 0.000 and 0.056) express a minimum risk to unjustly reject the hypothesis that there are no correlations between the analysed variables.

Following a comparative analysis, we notice connections of approximately the same intensity between the variables included in the suggested models (*Table 4*). We notice *Models 2* and *1* for the most intense connection between the variables Goodwill Per Share and the only independent variable that remains in the model, Other Comprehensive Income Per Share ($R=0.572$), and then between the Share

Price, as a dependent variable, with the predictors Earnings Per Share and Other Comprehensive Income Per Share ($R=0.541$). The determination ratio (R square) corresponding to *Model 2* shows that only 32.7% of the variance of Goodwill per Share is explained by Other Comprehensive Income per Share. A lower explanatory power, equal to a 29.30% variance of Share Price, is that of Earnings per Share and Other Comprehensive Income per Share in *Model 1*. The lowest significance is that of *Model 3*, whose variables explain only 15.30% of the modification of the result. *Model 4* has a moderate significance, since it includes an additional variable compared to the previous model, thus explaining a fraction equal to 24.30% of the variance of Total Shareholder Return.

Table 4. Test of the regression models proposed in the study

Models	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		ANOVA	
					df1	df2	F	Sig.
Model 1	.541	.293	.281	1.84801	1	123	25.444	.000
Model 2	.572	.327	.304	1.62212	1	30	14.567	.001
Model 3	.391	.153	.132	.67699	1	122	7.430	.000
Model 4	.493	.243	.218	.64278	1	121	9.689	.000

The best model can be considered to be *Model 2*, as it explains the connection between the variables to the greatest extent. A common element for all the suggested models is the predominant influence of other factors than those included in the model, on the dependent variables Share Price, Goodwill per Share and Total Shareholder Return. In other words, the independent variables in the models "capture" a fraction of the variance of the dependent variables. Therefore, we cannot exclude the idea that the dividend policy, the macroeconomic influences, the major international economic and political events, the contagion effect of the financial markets, the investors' psychology and the anomalies of the financial market, etc. could complete the list of causalities that explain the dynamics of the resulting variables, which we excluded from the present study. The high values of the F test and, corresponding to them, null values of Sig. confirm the existence of a significant linear connection between the variables included in the suggested models for studying the *relevance* of reporting the *Comprehensive Income* for the investors on the financial market.

The influence of the extent to which the reporting of Comprehensive Income is reflected in the value of the indicators considered as dependent variables is interpreted using the regression coefficients estimated in *Table 5*.

Table 5. Estimations of the regression parameters for models

Model	Variable	Unstandardized Coefficients		t	Sig.	Collinearity Statistics	
		B	Std. Error			Tol	VIF
1	(Constant)	-1.198	.170	-7.057	.000	-	-
	EPS	.253	.046	5.518	.000	.915	1.092
	OCIA	1.242	.457	2.720	.007	.915	1.092
	$Ln_P_t = -1,198 + 0,253 \cdot EPS_{t-1} + 1,242 \cdot OCIA_{t-1} + \varepsilon$						
2	(Constant)	-1.591	.301	-5.293	.000	-	-
	OCIA	1.864	.488	3.817	.001	1.000	1.000
$Ln_GWPS_t = -1,591 + 1,864 \cdot OCIA_{t-1} + \varepsilon$							
3	(Constant)	.045	.062	.727	.469	-	-
	CIA/Pt	.153	.040	3.797	.000	.496	2.018
	VarOCIA/Pt	-.096	.029	-3.308	.001	.445	2.224
	VarEPS/Pt	-.082	.034	-2.458	.015	.279	3.578
$Ln_TSR_t = 0,045 + 0,153 \cdot CIA/P_{t-1} - 0,082 \cdot VarEPS/P_{t-1} - 0,096 \cdot VarOCIA/P_{t-1} + \varepsilon$							
4	(Constant)	.003	.060	.053	.958	.994	-
	RRSa/Pt	.639	.169	3.785	.000	.493	1.006
	CIA/Pt	.141	.038	3.688	.000	.444	2.030
	VarOCIA/Pt	-.093	.028	-3.371	.001	.279	2.251
	VarEPS/Pt	-.077	.032	-2.406	.018	.994	3.586
$Ln_TSR_t = 0,003 + 0,141 \cdot CIA/P_{t-1} - 0,077 \cdot VarEPS/P_{t-1} - 0,093 \cdot VarOCIA/P_{t-1} + 0,639 \cdot RRSa/P_{t-1} + \varepsilon$							

Note: The coefficients in the regressions with dependent variables transformed by logarithms are interpreted after their reverse transformation, through an exponential function: $(e^{\beta} - 1) \cdot 100$

Models 1 and 2 include the same independent variables (Earnings per Share and Other Comprehensive Income Per Share) in order to test comparatively if their influence is reflected differently on some dependent variables with slightly different value relevance for the financial investor. In the case of both models, we can notice that both Share Price and Goodwill per Share are more intensely influenced by Other Comprehensive Income per Share. For an increase by one unit of Earnings per Share, Share Price increases 0.28 times, but under the influence of an increase by one monetary unit per share of the variable Other Comprehensive Income per Share, Share Price grows 2.46 times. We can notice the influence approximately 8.78 times higher of Other Comprehensive Income per Share on Share Price, compared to the effect generated by the modification of Earnings per Share. In Model 2, the stepwise procedure used to test the independent variables eliminates the variable Earnings Per Share, while Other Comprehensive Income Per Share remains the only variable which, for an increase by one unit, rises

Goodwill Per Share 5.44 times. The influence of Other Comprehensive Income per Share is more obvious on Goodwill per Share than of Share Price.

In Model 3, Total Shareholder Return grows by 16.53% under the influence of the increase by one unit of Comprehensive Income per Share. The increase by one unit of Other Comprehensive Income Per Share variance in relation with the investment per share ($VarOCIA/P_{t-1}$) causes a bigger drop, equal to 9.15%, of the resulting variable, in comparison with the unfavourable effects of the increase of Earnings Per Share variance in relation with the investment per share ($VarEPS/P_{t-1}$) by one unit, which diminishes the Total Shareholder Return by only 7.87%.

The analysis of the regression coefficients estimated for the variables in *Model 4* reveal the direct and significant influence of the increase by one unit of the Differences from the revaluation of tangible and intangible assets per share on the Total Shareholder Return, which grows by 89.45%. The following influence from the viewpoint of its intensity ranks the Comprehensive Income per Share, which, following an increase by one unit, determines a growth by 15.14% of the Total Shareholder Return. In *Models 3* and *4* we can notice that the unfavourable influence caused by the increase by one unit of the variance of Other Comprehensive Income Per Share on Total Shareholder Return is higher (8.88%) than the decrease caused by the growth by one unit of the variance of the return on investment per share (7.41%), on the same resulting variable.

Sig. values lower than 0.05 indicate that the *t* test statistics for rejecting the null hypothesis, stating that there is no significant link between the dependent variables and the coefficients of the suggested regression models, is significant for a level of confidence of 99%. We can thus confirm the connection between the dependent and the independent variables, the risk to unrightfully reject the null hypothesis being lower (1%) than the allowed risk of 5%. The tolerance test, performed using the Tolerance indicators and the Variance Inflation Factor, indicate the absence of the co-linearity between the independent variables included in the models. Therefore, the tolerance levels tend towards 1 for most of the variables of the regression functions, and the significant values of the Variance Inflation Factor translate the fact that there are no independent variables expressed by linear combinations of several independent variables.

5. Conclusions

For over two decades, the trend of «value relevance theory», of Anglo-Saxon origin, has generated a variety of studies that look for empirical evidence to prove the superiority of US GAAP to the international accounting norms or the

superiority of IFRS to national accounting regulations. Among these, the most significant are the studies concerned with analysing the beneficial effect of the switch to the IFRS, reflected in a higher relevance and credibility of the information meant for the investors on the financial market.

Our research can be included in the series of studies that test the value relevance of *Comprehensive Income*, suggested by the revised IAS 1, as a new model for reporting performance. This topic was also the concern of other researchers who either studied, in comparison, the value relevance of the net income and of the *Comprehensive Income*, or took into account the contribution of the big audit offices as well in enhancing the relevance of the information on global performance. The conclusions of these studies are contrasting, with the majority of the quoted authors admitting that the results of their empirical studies do not allow drawing definitive conclusions. Most of them deduct the absence of the relevance of *Comprehensive Income* in relation to that of net income, while others acknowledge the additional valences of reporting the comprehensive income for the investors of the financial market.

In the case of our study, the comparative analysis of relevance in reporting the components of Comprehensive Income in the Share Price and Goodwill per Share shows that Other Comprehensive Income per Share is more intensely correlated and has an influence on Goodwill per Share twice higher than on the share price. Moreover, we can notice the influence approximately 8.78 times bigger of Other Comprehensive Income per Share on Share Price, in comparison with the effect generated by the predictor Earnings per Share. Between the Total Shareholder Return and the variables derived from Comprehensive Income, there is a connection of moderate intensity. Nevertheless, in this case as well, Other Comprehensive Income per Share, the Variance of Other Comprehensive Income per Share and the Differences from the revaluation of tangible and intangible assets in relation with the investment per share are more expressive predictors than the Variance of Earnings per Share in relation with the Share Price.

For the analysed population and for the time horizon taken into account, we saw that Other Comprehensive Income can be considered a predictor taken in consideration by the investors on the financial market in supporting the decision to maximise stock returns. Thus, hypothesis **H₁** is validated, the results of our study confirm for the context of Romania those of the following authors: Barth and Clinch (1998), Cahan *et al.* (2000), Holthausen and Watts (2001), Kanagaretnam *et al.* (2009), Cormier (2009), Kang and Zhao (2010), Mironiuc *et al.* (2015).

This observation could be the consequence of the fact that Comprehensive Income and the elements that define Other Comprehensive Income represented innovating information, noticed and capitalised upon in a beneficial manner by the investors.

If we remember that, for 28% of the entities of the analysed population, Other Comprehensive Income was responsible for either a decrease in the loss for the fiscal year or for the transformation of this loss into Net Income, or for an increase of Net Income, the reporting of the information on Comprehensive Income was relevant and sent the investors a signal worth taken into account. This result might be explained by the fact that investors on Bucharest Stock Exchange are more or less familiar with the IFRS due to the history of the IFRS implementation in Romania, a history which is more than 15 years old. Moreover, the high expectations regarding beneficial consequences of the IFRS adoption, documented in previous researches, might play a role in the interest showed by investors towards the information provided by comprehensive income.

When ranking the effects of reporting the information on Other Comprehensive Income, we could see that the most visible degree of relevance lies in Goodwill Per Share, then in the Share Price, and thirdly in the Total Shareholder Return (H_2 is tested). Goodwill per Share, as an informative value, is not significant for speculators or for the investors who diversify their portfolio of securities at short time intervals. It is a more relevant indicator for the investors who wish to preserve their securities for a longer period (stock exchange practice recommends, in the case of securities dealt on the main capital market, to keep them for about two years).

The limitations of the present research derive from the fact that, in many cases, the analysed variables had extreme negative values, which although reflect the real situation of the observed entities, in order to comply with the conditions of statistic normality, have been eliminated from the set of observations that make up the database. In these circumstances, we have not been entirely free in choosing the analysed variables. Moreover, the analysis was limited to two fiscal years, knowing that the companies quoted on the Romanian regulated financial market apply the IFRS since 2012. Up until the moment when this research was performed, the financial statements for the fiscal year 2014 were not available for all the analysed entities.

Taking into account the limitations of the research and the level of development and liquidity of the Romanian financial market that is less comparable to that of other markets, we consider that the results of our study cannot be extrapolated, but could be an interesting idea to be developed by other researchers, for a larger population of entities quoted on representative financial markets, and for a more extended time horizon.

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