Empirical Study on the Informative Value of the Accounting Data Provided by the Companies Quoted in the Bucharest Stock Exchange

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Abstract

The present paper aims to analyze, by reporting to the data provided by the financial markets, the degree of relevance of the information provided by Romanian companies through their financial statements. This approach implies studying the influence of the reputation of the companies that perform the auditing of the annual statements, of the impact of the previously expressed audit opinion, as well as of the effect of the maturation of the Romanian stock market. The results show the existence of a low intensity of the connection between the accounting information and that generated by the stock market, which points to a limited impact of the data provided by the financial statements on the investment decisions. It is possible to notice, however, a superior level of the analyzed correlation, both in the case of auditing the synthesis documents by consecrated companies, and in the conditions of expressing a previous audit opinion, with certain reserves. In dynamics, it is possible to see a development of the dependencies established between the two information sources, which can be explained through the maturation process of the Romanian capital market.

1. Introduction

The significant structural transformations of contemporaneous economy and its ample mutations concerning the typology and intensity of the manifestation of specific risks generate significant difficulties for investors in the optimal support of the decision-making process. The analyses performed both for new placements and for evaluating the opportunity of preserving the old participants imply including in the debate an entire spectrum of factors that affect the pursued objectives. Dedicated to a large array of users, the accounting information asserts its primordial role even in the context of the need to render the investment decisions more efficient.

2. Defining qualitative features of financial accounting information in the conditions of the capital market

In essence, the informative value resides in providing accounting data referring to the historic activity of the companies, which would contribute to shaping a current and perspective profile of them, confirmed by the subsequent evolution of the economic entities. The usefulness of the information published through the financial
statements depends both on the degree of appropriateness of the information to the decision needs of the investor and on the level of certainty concerning their truthfulness.

Thus, two features are stressed, relevance and credibility, which, in our opinion, have a major impact on the informative value of the accounting data (in the context of information on the capital markets), without neglecting, however, the role of the amplifying qualitative characteristics (comparability, verifiability, opportunity, intelligibility), which insure correct and complete information of all the user categories.

A notion difficult to quantify, both for evaluating the maturation level of the national economic area and for coordinating the modernization of the accounting norms, the informative value of the accounting data can be evaluated especially through the correlation of the financial indicators, computed based on the data in the financial statements, with values that show the stock exchange evolution of the companies. The relevance of the accounting data is an intensively researched subject, which determines the conceptualization of the extent to which the information provided by accounting influences the investors’ decisions. In this sense, numerous authors define “value relevance” as the ability of the accounting numbers to collect information that affect the share price, respectively the value of the economic entity (Francis & Schipper, 1999; Barth et al. 2001; El-Sayed Ebaid, 2012).

The level of the “value relevance” of the accounting data is traditionally evaluated according to the degree of association (the dimension of the determination-R² ratio) of these data with the information specific to the stock market (Filip & Raffournier, 2010). Dumontier & Raffournier (2002) indicate, as a global benchmark of the intensity of the connection between the two types of information, a low level of the mentioned ratio (R²<30%), thus stressing the relatively reduced contribution of the accounting data in adopting the investment/disinvestment decisions.

Many authors signal, however, the dependency of this deterministic relation on the specificity of national factors, such as: maturity of the stock market (Filip & Raffournier, 2010), typology of the existent accounting system (based on law codes or customs) (Clarkson et al., 2011) or the structure of the shareholders (Burgstahler et al., 2006).

But the significant element preserved in most of the empirical studies performed on this subject concerns the impact of the specificity of the accounting norms, according to which the financial statements have been drawn, on the mentioned relation. Therefore, ample research is performed to evaluate the “value relevance” of the accounting data before and after the adoption of the IFRS at the international level (Barth et al., 2008), comparing the international norms with the American regulations (Barth et al., 2012) or the various national standards with the IFRS (Dobija & Klimczak, 2010; Kousenidis et al., 2010), in most cases, the results showing that the implementation of international accounting norms generates an increase in the relevance of accounting information.

Concerned with the evolution in time of the causal relation between the accounting numbers and the market information, specialized literature provides contradicting data. While certain studies (Gjerde et al., 2011; Collins et al., 2009) identify an increase in the degree of association between the two information benchmarks, other papers (Lim & Park, 2011; Balachandran & Mohanram, 2011) signal the descending trend of the relation. Although the studies include in the debate accounting references in full process of normalization and convergence, an element destined to eliminate spatial differences, the dispersion of the results obtained shows the significant impact of the characteristics of the economic environment on the “value relevance” of the accounting data.

Research in this field imposed the use of an impressive array of econometric models, attempting, through the involved variables, to seize as precisely as possible the intensity of the dependency relation identified. Of these, the Easton & Harris model(1991) is frequently used, proving its pertinence in various spaces and periods, as follows:

\[ K_t = \alpha_0 + \alpha_1 \text{EPS}_t/P_{t(1-1)} + \alpha_2 \Delta \text{EPS}/P_{t(1-1)} + \varepsilon_t \]

Where:

\[ K_t = (P_t - P_{t(1-1)} + D_t)/P_{t(1-1)} \]

\[ \text{EPS}_t = \text{earnings per share for the year } t; \]

\[ D_t = \text{dividend per share for the year } t; \]

\[ \Delta \text{EPS}_t = \text{the change in earnings per share}; \]

\[ P_t, P_{t(1-1)} = \text{price of share at the end of year } t, \text{respectively } t-1; \]

\[ \alpha_0 = \text{a constant expressing the mean of } K \text{ when } X_{1..X_n} = 0; \]

\[ \alpha_{1,2} = \text{regression coefficients}; \]

\[ \varepsilon_t = \text{random variable}. \]

In evaluating the opportunity to purchase new shares or to preserve the equity stake of the economic entity, estimating the global performance of the placement provides relevant information. This reflects the benefit obtained by the shareholders, both through the dividend received per share and through the added value generated by the raise
of the stock exchange value, thus providing an overall image of the profitability of the investment, being also a means of orientation in the decision to share the equity (Mironiuc et al., 2012).

3. The role of financial audit in insuring the credibility of the accounting data

Being in tight complementarity connection with the relevance of the accounting data, their credibility shapes the informative value of the financial statements, eventually contributing to minimizing the risks associated to the adoption of the investment decisions. Relevant information that is not credible is useless (Bricker & Chandar, 2012).

In this area of the certification of the financial statements, from the point of view of the compliance in their drawing with the accounting norms and principles, financial audit claims its essential role. Toma (2012) identifies the task of financial audit in providing trust for the public that the information diffused through the financial statements reflects the reality in the reporting entities, being the true and fair view of the assets, liabilities, financial position, profit or loss of the entity. Chersan (2012) mentions that validating of the information provided by the company is necessary because its production is the responsibility of management, and third parties cannot control it before the publication of the financial statements. Thus, the impact of the quality of the financial audit on the level of the “value relevance” of the accounting data is identified.

DeAngelo (1981) defines the quality of audit as “the probability, evaluated by the market, for an auditor to discover and report inappropriateness in the accounting system of the client”. Numerous studies have been performed, attempting to identify the level of the “value relevance” of the accounting data according to the auditors’ reputation (Dang et al., 2011), to the appearance, size, and characteristics of the audit team (independence and expertise) (Chan et al., 2011), or to the specificity of the audit opinion (Ruiz-Barbadillo et al., 2010). The results confirmed that the auditor’s reputation (their belonging to the Big4) determined, in the periods that precede the financial scandals, an increase in the intensity of the analyzed connection, at present the results being inconsistent. Also, the appearance, characteristics, and size of the audit team are directly related to the “value relevance” of the accounting data, while the audit opinion does not determine the occurrence of significant differences.

4. Research methodology

Developed to the purpose of evaluating the informative value of the financial data reported by the quoted Romanian companies, the present study aims at meeting the objective assumed by applying a consecrated econometric model in measuring the “value relevance” of the accounting data, the Easton & Harris model, on the economic reality specific to the autochthonous stock market. The analyzed population is represented by the companies quoted in the Bucharest Stock Exchange, and the study group, selected in layers, is made up of 80 companies that perform their activity in the field of industry, constructions, trade, and services.

Using the mentioned information benchmarks, by testing the work hypotheses, we aim to evaluate the informative value of the financial statements published by the BSE quoted companies.

**H1:** There exists, and it is possible to measure, a connection between the financial indicators computed based on the accounting information and investment performance, expressed through stock exchange rates.

**H2:** The audit opinion, as an exponent of the credibility of accounting information, determines its "value relevance" level.

<table>
<thead>
<tr>
<th>Audit opinion</th>
<th>2009 BIG 4</th>
<th>Other companies</th>
<th>Total</th>
<th>2010 BIG 4</th>
<th>Other companies</th>
<th>Total</th>
<th>2011 BIG 4</th>
<th>Other companies</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opinion with no reserves</td>
<td>7</td>
<td>53</td>
<td>60</td>
<td>8</td>
<td>47</td>
<td>55</td>
<td>9</td>
<td>51</td>
<td>60</td>
</tr>
<tr>
<td>Opinion with reserves</td>
<td>7</td>
<td>13</td>
<td>20</td>
<td>7</td>
<td>18</td>
<td>25</td>
<td>6</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
<td><strong>66</strong></td>
<td><strong>80</strong></td>
<td><strong>15</strong></td>
<td><strong>65</strong></td>
<td><strong>80</strong></td>
<td><strong>15</strong></td>
<td><strong>65</strong></td>
<td><strong>80</strong></td>
</tr>
</tbody>
</table>
Table no. 1 presents the distribution of the companies that compose the analyzed sample (80 companies) according to the structural requirements of the empirical approach. The financial and non-financial information necessary for processing was collected from the annual reports published by the companies considered in the study, corresponding to the fiscal years 2009, 2010, and 2011.

5. Results obtained and their interpretation

Data processing, necessary in order to test the work hypotheses $H_1$ and $H_2$, allowed obtaining sets of results presented, in what follows, through synoptic tables. Therefore, monitoring mainly the dimension of the determination ratio $R^2$, obtained after the regression analysis required by the application of the econometric model, the values of the regression coefficients are also synthesized, estimated for the independent variables involved, as well as the number of observations made (N) and the value of the indicator concerning the significance of the model (SIG), for each analyzed situation.

Table no. 2 presents the analysis made for the entire sample, completed by a sequential study, with the population being segmented according to the reputation of the audit companies, involved in certifying the financial statements.

Table 2. Analysis of the informative value of the accounting data according to the reputation of the audit companies

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Dependent variable – market return of share ($K$)</th>
<th>Total sample</th>
<th>BIG 4</th>
<th>Other companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constat $\alpha_0$</td>
<td></td>
<td>0.114</td>
<td>0.384</td>
<td>-0.080</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.010)</td>
<td>(0.014)</td>
<td>(0.015)</td>
</tr>
<tr>
<td>Earnings per share</td>
<td></td>
<td>-0.659</td>
<td>-1.076</td>
<td>0.196</td>
</tr>
<tr>
<td>(EPS)</td>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.068)</td>
</tr>
<tr>
<td>Change in earnings per</td>
<td></td>
<td>0.480</td>
<td>0.602</td>
<td>-0.324</td>
</tr>
<tr>
<td>share (ΔEPS)</td>
<td></td>
<td>(0.000)</td>
<td>(0.029)</td>
<td>(0.003)</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>160</td>
<td>30</td>
<td>130</td>
</tr>
<tr>
<td>$R^2$</td>
<td></td>
<td>0.187</td>
<td>0.464</td>
<td>0.091</td>
</tr>
<tr>
<td>SIG (model)</td>
<td></td>
<td>0.000</td>
<td>0.001</td>
<td>0.010</td>
</tr>
</tbody>
</table>

Note: The regression coefficients are presented with the associated sig. values between parentheses

From the analysis performed for the entire sample, we can notice that the independent variables, which are the expression of accounting information, explain 18.7% ($R^2=0.187$) of the variance of the share performance, computed based on the market information. Thus, a “value relevance” of the accounting data, in the Romanian context, is inferior to the international average, estimated by Dumontier & Raffournier (2002) at 30%, but comparable to that described in similar studies, such as that performed by Filip & Raffournier (2010). The model stresses the relatively low contribution of the accounting information in adopting the investment decisions, the influence of the random factors, in this sense, being substantial.

The introduction into the analysis of the reputation of audit companies, performed in order to evaluate the impact of the complementary dimension, of the credibility of the accounting information, shows a significant polarization of the results. The “value relevance” of the financial data, recorded for the companies whose financial statements have been certified by companies specialized in this respect, members of the Big 4 (KPMG, Ernst & Young, PricewaterhouseCoopers, and Deloitte), surpasses ($R^2=0.464$) the level recorded in the case when the annual reports were audited by other companies, usually national ones ($R^2=0.091$). This stresses the major contribution of the reputation of international audit companies to increasing the users' trust in the information published by the Romanian economic entities. At the same time, the results obtained indicate a significant reserve of the investors to the ability of the autochthonous audit companies to express a pertinent opinion on the legal compliance of the accounting records and of the financial statements drawn. The positive influence of the reputation of audit companies is also acknowledged internationally, but the dimensional difference between the two situations has minimum values.

Detailing our analytical approach by using the nature of the audit opinion as a disjunctive factor, it is possible to notice that the intensity of the connection between the accounting data and the market information presents significantly different values. According to the data illustrated in Table no. 3, in case of expressing an audit opinion
“with no reserves” in what concerns drawing the financial statements, the “value relevance” of the accounting data preserves a relatively constant level ($R^2=0.241$), close to the value recorded for the global analysis ($R^2=0.187$).

Table 3. Analysis of the value relevance of the accounting data in dynamics and according to the audit opinion expressed

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Dependent variable – market return of share (K)</th>
<th>Opinion with no reserves</th>
<th>Opinion with reserves</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constat $\alpha_0$</td>
<td>-0.027</td>
<td>-0.165</td>
<td>0.001</td>
<td>0.114</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.461)</td>
<td>(0.112)</td>
<td>(0.970)</td>
<td>(0.119)</td>
<td></td>
</tr>
<tr>
<td>Earnings per share</td>
<td>1.204</td>
<td>-0.747</td>
<td>0.368</td>
<td>-0.772</td>
<td></td>
</tr>
<tr>
<td>(EPS)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.004)</td>
<td>(0.000)</td>
<td></td>
</tr>
<tr>
<td>Change in earnings</td>
<td>-0.908</td>
<td>0.029</td>
<td>-0.019</td>
<td>0.550</td>
<td></td>
</tr>
<tr>
<td>per share (ΔEPS)</td>
<td>(0.000)</td>
<td>(0.846)</td>
<td>(0.880)</td>
<td>(0.001)</td>
<td></td>
</tr>
<tr>
<td>$N$</td>
<td>115</td>
<td>45</td>
<td>80</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.241</td>
<td>0.531</td>
<td>0.129</td>
<td>0.246</td>
<td></td>
</tr>
<tr>
<td>$SIG$ (model)</td>
<td>0.000</td>
<td>0.000</td>
<td>0.005</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

The alarm signal identified through the expression, by the entities entitled to verify the annual reports of the quoted companies, of an opinion “with reserves” determines the appearance of significant reactions in the capital market. The increase in the intensity of the analyzed connection ($R^2=0.531$) signals a behavior change of the investors, concretizing a higher concern with the quality of the information received through the financial statements. They support their investment decisions by using, to a large extent, accounting information, acknowledging at the same time the role of ensuring the credibility of the data reported by the economic entities through financial audit.

Analyzing the “value relevance” of the accounting data in dynamics, it is possible to notice the evolution of the dimension of the determination ratio ($R^2$), which transmits an optimistic note in what concerns the interdependence relation between the two sources of information, the capital market and accounting. In this sense, according to the data synthesized in Table no. 3, the degree of informative association of the two mentioned benchmarks presents a significant increase, from 12.9% ($R^2=0.129$) for the fiscal year 2009-2010, to 24.6% ($R^2=0.246$) for the period 2010-2011. This provides clues on the efficiency, in the context of the Romanian stock market, of the information activity for the main users of the accounting information, the investors.

In what concerns the statistical tests necessary for the correct application of the regression analysis, it is possible to state with a confidence of 95% ($Sig <0.05$) that, for all the analyzed cases, the econometric model adjusts the real data, thus showing a significant connection between its variables. We can nevertheless notice an inconsistency of the sense of the partial influences exerted by the independent variables on the resulting variable. Alternative connections are identified (direct and indirect) of the same factor (EPS or $\Delta$EPS), determined exclusively by the nature of the characteristic that lay at the basis of composing the group subject to the analysis. Similarly to other interpretations expressed in specialized literature, this situation can be explained by the lack of maturity of the Romanian stock market. The deterministic variances noticed do not invalidate the approach performed, as a useful part in the explanatory effort is played by the size of the determination ratio $R^2$.

Conclusions

Performing a research on the informative value of the accounting data reported by the quoted Romanian companies allows stressing the degree of relevance and credibility of the information presented in the capital market, contributing at the same time to creating a stable space for capital transfer. Thus, in the Romanian context, “value relevance”, as an expression of the relevance of the accounting data, has a lower value than the international mean. The obtained results correspond to the estimations made through similar studies, which confirms the existence of vulnerabilities in the area of informing the investors.

The inclusion into the analysis of the reputation of the audit companies and of the nature of the opinion expressed for the previous fiscal year, to the purpose of evaluating the impact of the complementary direction of the credibility of the accounting information, shows a significant polarization of the results. Therefore, the “value relevance” of the financial data recorded for the companies whose financial statements have been certified by firms specialized in this respect, members of the Big 4, surpasses the level recorded in case the annual reports are audited by other
companies, usually national ones. Also, if in case the audit opinion expressed is “with no reserves” in what concerns drawing the financial statements, the “value relevance” of the accounting data preserves a relatively constant level, close to the value recorded in the case of the global analysis, while publishing an opinion “with reserves” determines the appearance of significant reactions at the level of the capital market, which signals an important concern of the investors with the quality of the received information. An optimistic signal in what concerns the efficiency of the information activity for the investors is sent by the dynamic analysis of the degree of association of the two information sources, the capital market and accounting, the intensity of the connection presenting a significant evolution.

The limits of the study performed lie in including in the analyzed sample only of the companies quoted in the Bucharest Stock Exchange and in considering only one analysis model. Removing these issues, as well as applying more relevant data processing methods, are future research directions.

References