An Investigation into the relationship between Value Relevance, Earnings Management and Corporate Governance of listed companies in Tehran Stock Exchange

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Abstract
In this study, the relationship between the value relevance, earnings management and corporate governance is discussed, with and without the control variables. The place domain of the research includes companies listed on the Tehran Stock Exchange. The time domain includes the interval 2010-2014. The research is consisted of two independent variables (earnings management and corporate governance (dependent variable (the value (stock price), earnings per share, book value per share, related party transactions, market value of equity) and control variables (financial leverage, size Inc., age, industry, financial year). The role of corporate governance is to reduce divergence (contradiction) of interest between shareholders and managers. An example of deviation from the shareholders' interest management, profit management is seen through accrual accounting. Therefore, corporate governance probably leads to the reduction of earnings management. On the other hand, it reduces the value relevance in the company. The topic of the relation of corporate governance was initially proposed by Olson (1995). He experimentally shows that there is a meaningful relationship across certain characteristics of corporate governance, earnings management benefit and value relevance. (for example, Jian and Wang (2010), Haghight and Wang (2011) and Sean (2014)). In this study, corporate governance is measured with corporate governance standards, including the property institutional shareholders, the ownership of managers, the board and the percentage of free float shares and it is also used to measure earnings management of related party transactions, stock price and value relevance. Library and field data collected in two ways. According to an investigation on the basis of objective, the method is quantitative and applied and the assumptions are used through multivariate linear regression analysis as the basis for testing hypotheses (MD) and test specification error for symbolic regression. The statistical software Eviews 8 was used for data analysis and data were available for all users in the form of information after processing. Findings suggest that there is a significant and negative correlation between corporate governance mechanisms and profit management in companies, and by reducing the earnings management in the company, value relevance is also reduced.

Keywords: corporate governance, earnings management, value relevance.

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Introduction:
With the increasing spread of the global financial markets since twentieth century, issues such as stock price, management and income smoothing and corporate governance in the world of accounting, management, economics and other sciences are studied with a special sensitivity, and each of scholars and researchers have addressed and interpreted the results of their findings from their own scientific angles. Given that the value of the stock price, earnings management and corporate governance each separately could affect the Company's financial statements and other users of financial statements are directly or indirectly affected by these financial statements, the companies prefer to use value relevance which have more efficiency, reliability and more profit. In this research, the influence of the value of the index of corporate governance, earnings management and earnings management (institutional ownership, managerial ownership, the percentage of outside directors and the percentage of free float shares are investigated with or without the control variables in the model.

Research History:
Bahri Sales et al (2014) in a research investigated the relationship between the characteristics of board of directors and relevance of accounting information in accepted companies of Tehran Stock Exchange. The results indicated that the characteristics of board of directors such as size, board independence, dual role of Chairman and Director and financial knowledge of the board does not affect the relevance of accounting information.

As financial statements are the main tools to transfer financial data to the outside of the profitable units and are also considered the main common factor in all financial reports, it is expected that financial information reflected on them could provide results of operations and financial conditions in such a way to meet the information needs of a wide range of stakeholders, beneficiaries and stakeholders that have limited access to financial information profit units (Moin-ud-Din and et al., 2013).

Moin-ud-Din and colleagues (2013) study the effect of development and implementation of financial accounting standards on the relevance of accounting information in Tehran's Stock Exchange. The results indicate the improvement of the relevance data’s qualitative features after the implementation of national accounting standards.

Khoddami poor and Mahroomi (2013) in an article examined the impact of voluntary disclosure on per share relevance. Based on their findings, voluntary disclosure does not have a significant effect on the per share relevance.

Mehrani, Qayum and Moradi (2013) showed that an increase in institutional ownership concentration has led to the reduction of the quality of accounting information contained in the income statement and consequently the value of income statement is reduced, but the value relevance of information contained in the balance sheet is increase.

Hassanzadeh Brothers and Badavar Nahandi examined the relationship between some mechanisms of corporate governance and created value for shareholders and economic added value in 2013. The results of the research showed that out of the eight corporate governance mechanism in the study, only four mechanisms (penetration and state ownership, level of
institutional ownership, capital structure and free float) are related to the value created for shareholders. In addition, out of the eight corporate governance mechanism in the study, three mechanisms (the permeability and state ownership, the level of institutional ownership and free float) are related to economic added value.

Hallvon and colleagues (2013) showed that the relevance of book value increased over time, while the relevance of earnings per share decreased over time. The results also indicate that the accounting data explain a high ratio of stock prices.

An investigation into the factors affecting the relevance of accounting information indicates only firm size, firm growth and debt affect the relevance of accounting information. There is a meaningful inverse relationship between the relevance of accounting information related to the profits and models associated with accruals and cash flow and firm size. Thus, it could be said that the income statement and cash flow statement data is more relevant in small firms and vice versa (Heibatollah and Haiyan, 2013).

The value of accounting information is influential in the investment in valuable resources. The value relevance of accounting information itself is affected by conservatism. Therefore, accounting conservatism reduces investment and investment reduction would lead to the disappearance of benefit components. Ultimately, the value relevance of accounting information is reduced. For example, when a company is conservative, it invests less and takes most of its buying and investing to capital asset account rather than having to account the cost it takes. As a result, the fluctuation in earnings is increased over the different years and earnings components become more unstable. This makes the proper and relevant information less accessible for the users and the value relevance of accounting information is negatively affected (Hamberg and Byzland 2013).

Nicholas and John (2012) concluded that the book value and earnings per share are associated with the stock price. The book value compared to earnings per share is of higher relevance in connection with the stock price. Lakshen and VGA Kun (2012) in a review examined the corporate governance features of companies on bankruptcy. They found that corporate governance features, including board size, CEO duality, outside directors, shareholders, auditor's report, the audit committee and remuneration the board features Outside Directors, the audit Committee and board bonus have a negative correlation with the probability of bankruptcy as CEO duality is positively correlated with the probability of bankruptcy. While the size of the board and shareholders have no significant relationship factors.

Panya and Ain (2012) investigated the relationship between corporate governance mechanisms and accruals quality in Thailand. The results indicate that, companies that have a greater number of institutional investors are likely to manage earnings through discretionary accruals. In addition, companies that are active in the fierce market competition are likely to have a high quality of accruals.
**Research purposes:**

1. Determining the significance of variables and values, the rule of corporate earnings management of listed companies in Tehran Stock Exchange.
2. Mechanism and effectiveness of variables and values, the rule of corporate earnings management of listed companies in Tehran Stock Exchange.

**Scientific purposes:**

The main goal of this research can be an ideal presentation of a comparative analysis between value relevance, earnings management and corporate governance of listed companies in Tehran Stock Exchange. In this context, sub-goals to be achieved are as follows:

- Accounting information for investors in the Tehran Stock Exchange is of relevant value.
- The profitability (loss) has a significant effect on the value relevance.
- Value-relevant accounting information has a more relevant value in small firms than larger firms.
- Earnings and book value is positively and significantly associated with the company’s value.
- Long-term earnings management through discretionary accruals compared with earnings management through items is much more influential in short-term relevance of earnings and book value.
- Optimal quality of corporate governance leads to a reduction in earnings management.

**Practical purposes**

Method of study is analytical-descriptive with an applied approach that can be used by a large number of users of accounting information to invest in the capital market. As a result, optimal allocation of resources is used for economic growth and development (shareholders and investors). According to analyses, such as creating transparency in accounting information, value relevance and reliability of the accounting information and increasing disclosure’s information content, etc.

**Research Hypotheses:**

Hypothesis 1: There is a significant relationship between earnings management and the relevance of its value.

Hypothesis 2: There is a significant relationship between corporate governance and earnings management.

**Statistical Society:**

For the selection of population, it has been referred to listed companies in Tehran Stock Exchange because: firstly, information of listed companies in Tehran Stock Exchange is officially certified by the reliable auditors and Exchange Organization. Therefore, it has a higher reliability compared to the information of other companies. Secondly, access to the information of these companies is much easier compared to other companies.
Statistical population of the research includes all companies listed on Tehran Stock Exchange between years 2010 to 2014. So financial information required, particularly financial statements and independent auditors' reports and notes to the financial statements need to be available for extraction of required data. In this study, simple random sampling method is used for sampling. For this purpose, all the members which have the following features are chosen, the rest have been removed:

1- The considered companies had continuous activities during the period of investigation, and their shares were traded.

2- The companies should not be among the financial intermediation and insurance companies.

3- The company's financial information would be available during the periods studied.

4- The types of ownership of these companies should be constant during the years under review.

**Statistical sample:**

Having assessed the situation based on the method for selecting companies which were systematically removed, finally, 85 companies were selected as sample data and their financial information were used in the conducted analyses.

**Research model and Variables studied:**

According to the hypothesis, the current research is simultaneously derived from a model SLS 2, which contains the following equations. The first equation (Equation 1) is presented for the first hypothesis, which is modified in the framework of the theoretical model proposed by Olson (1995) and to introduce improved profits management proxy through transactions with related individuals that are in relation with secondary trading components. This is designed compatible with the theory of Jian and Wang (2010), Haghighat and Wang (2011) and Sean (2014).

The second Equation (equation (2)) is designed to examine the second hypothesis and to measure the relationship between earnings management (ABNRPT) and corporate governance.

**Equation of value relevance:** (for hypothesis 1)

\[
\text{PRICE it} = f (\text{BVPS it}; \text{EPS it}; \text{ABNRPT it}; \text{EPS it}_- \text{ABNRPT it}; \text{YEAR t}; \text{INDUSTRY i})
\]

Earnings management model (for hypothesis 2)

\[
\text{ABNRPT It} = f (\text{CGQ it}; \text{ROA it}; \text{FIRMSIZE it}; \text{FIRMAGE it}; \text{YEAR t}; \text{INDUSTRYI})
\]

**PRICE:** Represents the price per share to the company's internal stock which is measured as stock price per share * number of shares.

Lu and Wang (2011) used the method of trading with related parties to measure earnings management using related abnormal party transactions. Also Jian and Wang (2010) define the model of related abnormal party transactions in order to manage profits (ABNRPT) as follows:

\[
\text{RLPT it} = \alpha + \beta_1\text{LEVERAGEit} + \beta_2\text{FIRMSIZEit} + \beta_3\text{MKVE} + \varphi_1-6\text{INDUSTRY} + \varepsilon_i
\]
LEVERAGE: Financial leverage, ratio of total debt to total assets of the company.

MKVE: it indicates the selling price of a stock in the market which is measured by the market value of shareholders’ equity in respect with book value of shareholders’ equity.

FIRMSIZE: How to measure it, sales log or total assets of the company.

α: Transactions Proxy with abnormal related individuals (ABRupt), also used as the dependent variable in the earnings management equation (second equation), and finally, the impact of earnings management is investigated by means of value relevance equation model (equation I).

β and α: specific parameters for each company based on the relevant industry of the company which is derived from Jones’ regulated model (1991).

ROA: Capital and assets efficiency for the company i in the fiscal year t (Assets efficiency rate);

FIRM AGE: age, by a number of early years’ list for the company i in the fiscal year t;

ε it: error term for the company i in the fiscal year t;

RLPT: (transactions with related individuals): According to the standard No. 12 of Iran (1386), trading with related individuals is defined as following: the transfer of resources, services or obligations between related parties, regardless of demand or lack of demand for their prices. And the total amount of transactions with related individuals disclosed in the notes to the annual financial statements of companies listed on the Tehran Stock Exchange has been used divided by the total assets of the company.

Book value of shares: the value recorded on the balance sheet (in the case of goods and commodities), whether it be for this year, or 10 years ago, it is called the book value.

EPS: (earnings per share): If the total profit after tax reduction is divided into the number of shares, earnings per share is obtained.

Internal and external mechanisms of corporate governance:

OIS: The ownership entity, in this study, the total percentage of shares owned by institutional investors is used to measure the percentage of institutional ownership. To calculate the percentage of institutional ownership, institutional ownership in each company's number of shares is divided by the total number of shares.

OM: The ownership of managers, in this study, the total percentage of shares owned by the management (board) is used to measure the percentage of management ownership.

BODS: board structure, the ratio (%) of non-executive board members to the Board of Directors (non-executive and executive member).

BRDSZE: board size, number of managers (both non-executive and executive) who are a member of the board.
MFF: the percentage of free-floating stock, free-floating stock ownership percentage is a number that is obtained by the result of subtracting the number of non-tradable shares of the stock divided by the company’s total number of shares (Shingo, 2001).

<table>
<thead>
<tr>
<th>Variable type</th>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related</td>
<td>PRICE _it</td>
<td>Representative of the domestic stock price per share for the company</td>
</tr>
<tr>
<td></td>
<td>ABNRPT _it</td>
<td>Earnings management</td>
</tr>
<tr>
<td>controls, independent</td>
<td>EPS _it</td>
<td>Earnings per share</td>
</tr>
<tr>
<td></td>
<td>CGQ _it</td>
<td>Standards of corporate governance (institutional owners (INSAN), property management (MAN), the percentage of free float shares (flowshare) and non-executive Drsdmdyran (Out ratio)</td>
</tr>
<tr>
<td></td>
<td>ROA _it</td>
<td>Return on assets</td>
</tr>
<tr>
<td></td>
<td>FIRMSIZE _it</td>
<td>company size</td>
</tr>
<tr>
<td></td>
<td>FIRMAGE</td>
<td>Company life</td>
</tr>
</tbody>
</table>

Table (1): The definition of variables symbol

**Descriptive Statistics:**
In order to better understand the nature of the society that is studied in the research and learn more about the research variables, prior to the analysis of statistical data, it is necessary for data to be described. The statistical description of data is a step towards the recognition of governing patterns and a basis for explaining the relationships between variables that are used in research. So, before the research hypotheses to be addressed, variables can be examined briefly. This table contains indicators for describing the research variables. In data analysis process in the table (1), mean, median, standard deviation, maximum and minimum are calculated.

- The main central index is the average which represents the average balance and center of gravity distribution. It is a good indicator for the data centrality. For example, the average value for the variable size of the company (FIRMSIZE) equals to (792/11) showing that more data are concentrated around this point.
- In general, scattering parameters, are criterion for determining the amount of dispersion of each other or their amount of dispersion compared to the average. The most important parameters of the dispersion is the standard deviation. The value of this parameter for variable earnings per share (EPS).
The following model was used to test the first hypothesis:

\[ \text{PRICE}_{it} = \alpha_0 + \beta_1 \text{ABNRPT}_{it} + \beta_2 \text{EPS}_{it} + \beta_3 \text{EPS}_{it} \ast \text{ABNRPT}_{it} + \epsilon \]

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>Standard error</th>
<th>Z statistic</th>
<th>Significant level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABNRPT normal</td>
<td>.006</td>
<td>0.000</td>
<td>-28.14</td>
<td>0.000</td>
</tr>
<tr>
<td>EPS</td>
<td>2.19</td>
<td>2.27</td>
<td>9.64</td>
<td>0.000</td>
</tr>
<tr>
<td>Eps* ABNRPT normal</td>
<td>-2.49</td>
<td>2.30</td>
<td>-1.08</td>
<td>0.279</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.025</td>
<td>0.000</td>
<td>121.30</td>
<td>0.000</td>
</tr>
<tr>
<td>Co-integration test results</td>
<td>Value and</td>
<td>-8.265</td>
<td>Significant level</td>
<td>0000</td>
</tr>
<tr>
<td>The whole model is significant</td>
<td>Wald statistic value</td>
<td>43.2323</td>
<td>Significant level</td>
<td>0.000</td>
</tr>
<tr>
<td>Adjusted coefficient of determination</td>
<td>27 Percent</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table (3): Estimated first model
According to Table 3 and the results of previous tests:

Limer F-test significant level equals to 000 /. Which is less than 5% and panel data will be accepted. As Hausman test is also significant more than 5%, it represents random effects of intercept.

In this study, the test Woaldridge is used in Stata software to identify serial autocorrelation. Because the probability of this test is less than 5%, it indicates the existence of serial autocorrelation in the model.

In this study, in order recognize the presence or absence of heterogeneity of variance, the adjusted Wald test is used in the software Stata. Because the probability of this test is less than 5%, the heterogeneity of variance is confirmed. The inconsistency in the analysis of the variance and serial autocorrelation has been met.

Statistical significance level of Wald test (48/223) is 000 / and it’s less than 5%. So we can say that the model in general is significant.

Earnings management and earnings per share have a positive coefficient. This means that these two variables are positively associated with the dependent variable. Due to the significance level of less than 5%, so the correlation is statistically significant at the 95% confidence level and the first hypothesis is accepted. The relationship between earnings management and earnings per share has more than 5% significance level. Therefore, it is not considered significant. Collective test result (Lu Levin Chu) or the test for the remained sentences of the regression has less than 5% significance level and it demonstrates the fact that there is no need for fixity of each variable and the model is just as viable. The following model was used to test the second hypothesis:

\[
\text{ABNRPT it} = \alpha_0 + \beta_1 \text{CGQ it} + \beta_2 \text{ROA it} + \beta_3 \text{FIRMSIZE it} + \beta_4 \text{FIRMAGE} + \epsilon
\]

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>Standard error</th>
<th>Z statistic</th>
<th>Significant level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insown</td>
<td>-.001</td>
<td>0.00</td>
<td>-5.41</td>
<td>0.000</td>
</tr>
<tr>
<td>Maown</td>
<td>-.001</td>
<td>0.000</td>
<td>-3.79</td>
<td>0.000</td>
</tr>
<tr>
<td>Flow share</td>
<td>-.001</td>
<td>0.000</td>
<td>-5.80</td>
<td>0.000</td>
</tr>
<tr>
<td>out ratio</td>
<td>-.001</td>
<td>.007</td>
<td>-12.54</td>
<td>0.000</td>
</tr>
<tr>
<td>ROA</td>
<td>-26.278</td>
<td>.335</td>
<td>-78.38</td>
<td>0.000</td>
</tr>
<tr>
<td>FIRM SIZE</td>
<td>-2.128</td>
<td>0.004</td>
<td>-430.40</td>
<td>0.000</td>
</tr>
<tr>
<td>FIRMAGE</td>
<td>.001</td>
<td>0.000</td>
<td>3.40</td>
<td>0.001</td>
</tr>
<tr>
<td>Intercept</td>
<td>25.205</td>
<td>0.057</td>
<td>440.39</td>
<td>0.000</td>
</tr>
</tbody>
</table>
Collective Value and -10.18 Significant level 0.000
The whole model is Wald statistic Significant level 0.000
significant value 2258
Adjusted coefficient of 62 Percent
determination

Table (4): estimates the second model

According to Table 4, institutional ownership variable, managerial ownership, the percentage of free float shares and non-executive managers’ percentage have a significant and inverse correlation with earnings management. Therefore, the second hypothesis is also accepted.

The firm’s lifetime also has a direct relationship with earnings management. The variables of capital efficiency, firm size and financial leverage have a significant inverse relationship with the dependent variable.

<table>
<thead>
<tr>
<th>As hypothesized</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 A significant relationship between earnings management and value relevance of information there.</td>
<td>reception</td>
</tr>
<tr>
<td>2 There is a significant relationship between standards of corporate governance and earnings management.</td>
<td>reception</td>
</tr>
</tbody>
</table>

Table (5): summarizes the findings of research

Conclusions based on research hypotheses:

This study aimed to investigate the relationship between the value relevance, earnings management and corporate governance of the listed companies in Tehran Stock Exchange for the fiscal year 92-88. For the purposes of this study to be achieved, 85 firms were selected using playoff sampling. Four indicators were used including corporate governance, institutional owners, managerial ownership, the percentage of free float shares and the percentage of outside directors to measure earnings management via the models of Lu and Wang (2011). To test the research hypotheses, the pattern of combinatorial data were used. The results of the first hypothesis showed that as earnings management increased, we witnessed a reduction in book value and earnings per share. This hypothesis has been also accepted. The results correspond with the findings of Lu and Wang (2011) and Sean (2014) as well.

The second hypothesis showed that as the proportion of non-executive members of the Board of Directors increased, manipulation of the actual activity decreased. The non-executive directors have more autonomy to executives compared to administrative directors due to lack of administrative posts. In this way, when the board independence increases, it is likely that the actual manipulation activities such as sales, discretionary spending and operational activities should be reduced. And then the second hypothesis suggests that an increase in institutional ownership reduces the amount of manipulation in real activity. That means that as the percentage of institutional investors increased, the ownership management reduced. In the third test,
mechanism showed that managerial ownership is inversely associated with real earnings management and this trend is likely to reduce profit by manipulating the actual activities. And in the fourth test of mechanism, corporate governance and the percentage of free float shares reduces the amount of earnings management. This hypothesis is accepted. Lu and Wang (2011) and John and Wang (2010) showed that increased corporate governance mechanisms leads to the reduction of transactions management with related parties.

Among the control variables, firm size is positively correlated with earnings management. So, in big companies the manipulation of the actual activities is more than small companies. The ratio of market value to book value shows a positive correlation with earnings management. This argument shows that the more the rates of investment opportunities, the more motivated are the managers to manipulate actual activities. Financial leverage is also negatively correlated with earnings management. This result suggests that in firms that the debt is less, incentive to manipulate the actual activities is higher.

**Research recommendations**

**Recommendations in line with research findings:**

According to theoretical principles and results, it is suggested Stock Exchange and Corporate Audit, should enact some regulations and standards for better monitoring the managerial behavior of multiple companies in the choice of accounting methods and government regulations, which could lead to the manipulation and presentation of unrealistic profit. In the process of developing accounting standards by auditing organization in Iran, literature and transparent definition of earnings management is not provided.

According to the findings and results of similar studies regarding the relationship between earnings management and value relevance and significant relationship between corporate governance and earnings management (related party transactions), to users of financial statements, especially investors it is recommended to consider the subject prior to any decision, including investment.

**Recommendations for researchers:**

1- Conducting research using the Company's periodical financial information.

2- Investigation of the present research using Companies’ financial information which are active in the stock exchange.

3- The comparison between other variables associated with the value relevance, earnings management and corporate governance.

4- The shift in independent and dependent variables, and an investigation into the the relationships between them.

5- Using other control variables to examine the relationships across value relevance, earnings management and corporate governance.
6- Measuring the ability of corporate governance by other factors and variables.

7- Repeating this research in different industries and an industry-to-industry comparison of earnings management based on ability and adequacy of corporate governance.

8- A comparative study of the present subject in the separated samples based on size firms listed in Tehran Stock Exchange into two groups, large and small.

9- Investigating the effect of Earnings Management on other quality characteristics such as reliability and timeliness of accounting information.

10- Investigating the effect of Earnings Management on the relevance of accounting information such as cash flow per share.

Research limitations:

Lack of adjustment for financial statements due to inflation and having different times for ending financial periods and business units
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