The effects of financial and non-financial variables on financial information and investment efficiency in Tehran bourse

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Abstract

Accounting is a processing system that designed to identify, measure and classification of financial events that affect on firms, business enterprises and report of affecting of this events to determinants. Environment of business units is variable and modification in political, social and economical structure request modification in data requirements.

On the other hand; due to the new data requirements that provide for users in accounting environment it seems that modification in accounting principles or make principles and standards of measuring and reporting with best quality is unavoidable. Also increasing the data must be disclosure is necessary.

Many ingredient affect on financial reporting quality also; financial reporting affect on many ingredient. One of the main goals of financial reporting relative to simplify the optimum allocation of assets in economic. One of the most important views of this issue, relative to improvement decision making for investment. Increasing clarify of financial activities provide a potential to decrease problems of non efficient investment. In this research is investigated relative between financial reporting quality and investment efficiency.

Career of 2009-2013 have used and proposal testing have done by SPSS software by using of descriptive and presumption statistics such as correlation analysis. Conclusion of this research declare that there is positive and straight relation between financial reporting quality and investment efficiency.

Keywords: financial and non-financial variables, investment, Tehran bourse.
Introduction

Performance and accounting practices over the centuries have undergone significant changes, but in the course of these changes, the ultimate goal of accounting, which is the information needs of users of accounting services, has remained unchanged. In other words, concepts, principles, and procedures governing the current practice of accounting in fact reflect the needs of different groups using accounting data over time. Expectations, needs and demands of users are very diverse and often determine the type of information that must be provided to be the base of the judging, evaluation and making decisions. Due to different relationships that different groups using financial information have with the entity, they often need different types of information. Financial information is beyond the financial statements and includes another intelligence tools such as board reporting, periodic reports, and internet informing.

Financial information is just not a finished product, but a process consisting of several components where many factors affect the quality of financial data. Moreover, financial information affects a variety of factors. During various investigations, the relationship among the quality of financial information and financial and non-financial variables of the firms has been evaluated. The main approach of this paper is effect of the financial and non-financial variables on the relationship between financial information and efficiency of investment and the factors affecting it.

Research background

Foreign research: Bushman and Smith (2001), and Lambert et al. (2007) in their research on the quality of financial information and investments concluded that enhancement of the quality of financial information enhances the efficiency of investment. Moreover, Biddle and Hilary (2009) in a study concluded that firms with high quality financial information have high investment performance and low sensitivity to cash.

Garcia and Asma (2010) in a study entitled "Accounting conservatism and investment performance" said that the conservatism 1) by reducing the investment in the environments where managers are likely to invest more improves control process over investment decisions of the management. Moreover, 2) by increasing investment in environments where the managers are less likely to invest, it facilitates access to financing from external sources to a lower price. They found that conservative companies less likely to invest more and invest much less than they have to.

Feng Chen (2010) during a study entitled "The quality of financial reporting and the efficiency of investment by private companies in emerging markets" assessed the quality of financial reporting quality (FRQ) in private sectors in emerging markets and its relationship with investment performance. Using World Bank data about companies, he concluded that the quality of financial FRQ is positively related with investment performance.

Research within the country

Over his accounting doctoral thesis in 2009 entitled "Explaining and providing a model for determining and assessing the factors affecting the selection of FRQ in Iran," Baadavar Nahandi investigated the factors affecting FRQ in Iran. The results of uni-
variate exam analysis of hypotheses related to identifying factors affecting the choice of FRQ indicated that FRQ has a positive relationship with profitability and efficiency of enterprise, and a negative relationship with competition in product market, conservatism of management, size, capital intensity of business, operational cycle, and environmental complexity of the firm.

Research hypotheses

The main hypothesis 1: there is a relationship between quality of financial information and investment efficiency in the capital market of Iran.

The main hypothesis 2: firm size affects the relationship between affect the quality of financial information and investment efficiency.

The main hypothesis 3: Cash held by the company affects the relationship between the quality of financial information and investment efficiency.

The main hypothesis 4: Opportunities for the company growth affect the relationship between the quality of financial information and investment efficiency.

The main hypothesis 5: objectivity of company assets affects the relationship between the quality of financial information and investment efficiency.

Research Methodology

Data collection method in this study is library method. Gathering information was by using the company's basic information, i.e. information and data needed for research are all obtained from the library method using Rah Avard Novin software, by referring to the Tehran Stock Exchange, and studying financial statements of the firms listed in the Tehran stock exchange during the years 2010-2013. After collecting data, Excel spreadsheet software was used to classify information and calculate variables and the data, and finally using SPSS software were analyzed. To run statistical tests, Pearson correlation, regression, and analysis of variance (ANOVA) were used.

Measurement variables

The dependent variable:

Investment efficiency

According to the study by Bidet et al. (2009), to calculate investment efficiency, the formula of the deviation from the expected investment using investment forecasting model as a function of income growth is used.

\[
Invest_{i,t} = a_0 + a_1 \text{NEG}_{i,t} + a_2 \% \text{RevGrowth}_{i,t-1} + a_3 \text{NEG} \times \% \text{RevGrowth}_{i,t-1} + \varepsilon_{i,t}(1-1)
\]

Invest \(_{i,t}\): Total investments in machinery, equipment, land, buildings, research and development expenses minus revenues from the sale of fixed assets divided by total assets of the company \(i\) in year \(t\)
NEG_{i,t}: Dummy variable that takes one for negative values of company’s earnings growth otherwise zero

\%RevGrowth_{i,t-1}: annual income growth rate of company i in year t-1

\varepsilon_{i,t}: residual error

a_1 to a_3: variable coefficients (slope)

a_0: fixed amount calculated by the regression model

**Independent variable**

**FRQ:** to calculate FRQ, first, based on the model by Mac Nichols (2002), we calculate accruals quality, so the absolute value of the residual error is considered as representative of the quality of financial information.

Accrual Items Quality (AIQ): AIQ is calculated based on the model by Mac Nichols (2002). Mac Nichols' model is as follows:

\[
\frac{\Delta WC_{i,t}}{Assets_{i,t}} = \beta_{0,i} + \beta_{1,i} \frac{CFO_{i,t-1}}{Assets_{i,t}} + \beta_{2,i} \frac{CFO_{i,t}}{Assets_{i,t}} + \beta_{3,i} \frac{CFO_{i,t+1}}{Assets_{i,t}} + \beta_{4,i} \frac{Sales_{i,t}}{Assets_{i,t}} + \beta_{5,i} \frac{PPE_{i,t}}{Assets_{i,t}} + V_{i,t}(1-2)
\]

In the above equation:

\(\Delta WC_{i,t}\): equals the change in working capital accounts in company i in year t, which is calculated as follows:

\(Assets_{i,t}\): Average assets of company i in year t

\(CFO_{i,t-1}\): Cash from operations of company i in year t-1

\(CFO_{i,t}\): Cash from operations of company i in year t

\(CFO_{i,t+1}\): Cash from operations of company i in year t

\(Sales_{i,t}\): Change in sales accounts of company i in year t

\(PPE_{i,t}\): Property and equipment of company i in year t

\(VI_{i,t}\): residual error

\(\beta_{1,i}\) to \(\beta_{5,i}\) variables coefficient (slope)

\(\beta_{0,i}\): constant amount calculated by the regression model

**Population and sample**

The study population includes companies in the Tehran Stock Exchange in 2010-2013 that are 405 companies.
The results of testing the hypotheses under variables conditions

According to the analysis presented in the chapter four, which was performed on hypotheses, first separately, the results of each hypothesis are pointed out, and then the general conclusions about the findings of this study is discussed.

The results of the first main hypothesis

According to the tests and analyses done through correlation and regression in Chapter (4) and as is seen in Figure (3.4), we concluded that there is a positive correlation between FRQ and the efficiency of investments in listed companies in Iran capital market, and its value is 0.359, which is the average correlation coefficient. In fact, the aforementioned variables cannot act independently, and according adjusted coefficient of determination obtained from it, 0.126, it is shown that 12.6% of the changes in investment efficiency is dependent on FRQ and the rest are related to variables that have not been considered in this study. The examinations showed that this hypothesis has been confirmed, and there is a positive linear relationship between FRQ and investment efficiency.

The results of the second main hypothesis

According to the tests and analyses done through correlation and regression, the comparison of the results from the bivariate regression between FRQ and investment efficiency, and tri-variable regression analysis with the presence of the adjusting variable, the size of the company, it is shown that with the addition of the adjusting variable, the size of the company, in the regression model, the adjusted coefficient of determination increased by 3.5% and reached 16.1% from 12.6%. These results indicate that firm size affects the relationship between FRQ and investment efficiency and should be added to the regression model. Sig (significance level) is less than 0.05, which demonstrates the existence of an average correlation between the variables. Considering that in the table related to the linearity test of the model, sig is less than five percent, the assumption of a linear relationship between the three factors is confirmed. According to the results obtained, the second main hypothesis (firm size affects the relationship between FRQ and investment efficiency) is confirmed.

The results of the third main hypothesis

According to the tests and analyses done through correlation and regression, the comparison of the results from the bivariate regression between FRQ and investment efficiency, and tri-variable regression analysis with the presence of the adjusting variable, the cash held, it is shown that with the addition of the adjusting variable, the cash held, in the regression model, the adjusted coefficient of determination decreased by 0.7% and reached 11.9% from 12.6%. These results indicate that the cash held does not affect the relationship between FRQ and investment efficiency and should not be added to the regression model. Moreover, sig (significance level) is more than 0.05, which demonstrates the lack of existence of correlation between this variable and investment efficiency.

The results of the fourth main hypothesis

According to the tests and analyses done through correlation and regression, the comparison of the results from the bivariate regression between FRQ and investment efficiency, and tri-variable regression analysis with the presence of the adjusting variable, growth opportunities,
it is shown that with the addition of the adjusting variable, growth opportunities, in the regression model, the adjusted coefficient of determination increased by 4.4% and reached 16.8% from 12.6%. These results indicate that growth opportunities affect the relationship between FRQ and investment efficiency and should be added to the regression model. Sig (significance level) is less than 0.05, which demonstrates the existence of an average correlation between the variables.

The results of the fifth main hypothesis

According to the tests and analyses done through correlation and regression, the comparison of the results from the bivariate regression between FRQ and investment efficiency, and tri-variable regression analysis with the presence of the adjusting variable, the objectivity of the assets, it is shown that with the addition of the adjusting variable, the objectivity of the assets, in the regression model, the adjusted coefficient of determination decreased by 1.1% and reached 11.5% from 12.6%. These results indicate that the objectivity of the assets does not affect the relationship between FRQ and investment efficiency and should not be added to the regression model. Moreover, sig (significance level) is more than 0.05, which demonstrates the lack of existence of correlation between this variable and investment efficiency. According to the results, the fifth main hypothesis (objectivity of the assets affects the relationship between FRQ and investment efficiency) is not confirmed. This result is consistent with the results of research by Feng Chen in 2010.

The overall conclusion of research

What exists in the summary and conclusions of testing research hypotheses about a significant relationship between independent variables and adjusting variables with the dependent variable, efficiency of investment of firms in Tehran Stock Exchange in the period from 2009 to 2013 is that FRQ has a positive and significant relationship with investment efficiency. Firm size and growth opportunities affect the relationship between FRQ quality and investment efficiency. The results obtained in this study are consistent with the results of the investigation by Feng Chen in 2010 and others.
Persian references:


