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The Effect of Information Quality and Investors Preferences on Volatility Prediction Accuracy of Market Stock Value in the Companies Listed in Tehran Stock Exchange, Iran

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Abstract: The aim of this study was to investigate the effect of information quality and investors' preferences on volatility prediction accuracy of market stock value in "the companies listed in Tehran Stock Exchange", Iran. The population was listed companies in Tehran Stock Exchange in the time period of 2006- 2013 that Based on the criteria for sample selection, 55 companies were selected. The results showed that information quality had a significant effect on predicting future volatility of stock market value on the Tehran Stock Exchange. The results showed that the preferences of investors to predict future volatility in the market value of stock on the Tehran Stock Exchange had a significant effect. And investors with both information quality and investors preferences can provide volatility prediction in the market value of stock on the Tehran Stock Exchange for future periods.

Keywords: Investment Return, Quality of Accounting Information, Investors' Preferences, Predicting Future Returns of Stock.

Introduction

Strong and efficient financial markets with financial organizations enable the growth and economic development of each country. Since, the Stock Exchange boom is considered as as a very important criterion for assessing a country's economic development, economic and social effects is effective on economic and psychological balance (Tehrani, et al., 2010). Today investors to choose the investment consider many factors. Based on existing approaches, investment decision is not based on only technical and rational analysis (Haghighat and Iranshahi, 2010). Of course, identifying the factors that influence the decision making of investors and prioritize them in terms of their importance can provide the basis for providing quality services to investors and is considered proper action in the development of investment in the country. But the preferences of investors is effective on the market value of stock. In fact, the first stage of the investment decision process is evaluation and analysis of securities, separately. Evaluation of securities is subordinate of risk and expected return (Khalili et al., 2009). First, we must identify the different portfolios and the factors affecting them. In the next step, it should be to evaluate and estimate the price or value of securities. The market value is influenced by several factors, these factors are the factors that investors pay attention to it in their investment preferences. Quality market information helps to make better investment and this affects the market value. The aim of this study was to investigate the effect of information quality and investors preferences on volatility prediction accuracy of market stock value in "the companies listed in Tehran Stock Exchange", Iran.

Materials and Methods

The research method was descriptive-correlation type. The population was all the companies listed in Tehran Stock Exchange between 2006 to 2013 that 55 companies were selected based on the criteria for sample selection. The selection criteria of this study were as follows;

1. The financial year is ending to 29 March of each year.
2. During this period, it has not changed its fiscal year.
3. Tax forms Information be available completely and continuously since 2005.
4. It is not as investment companies and financial intermediation.
5. Companies should have a book value of positive equity and positive net operating assets during research period.

Research variables were volatility in the market value, total commitment anomalies items of working capital, investment preferences, real volatility swing of market value and virtual variable for consumer preferences. The following regression model was used to achieve the research goals. The first model to examine the relationship between variables in the model was:

$$\text{Market value volatility} = \alpha + \beta_1 * \text{Quality of information} + \beta_2 * \text{Investor preferences} + \varepsilon$$

The volatility of market value is considered to be zero and one to estimate the function as a logistic function. The second model to predict real volatility of market value during the future periods was:

$$RV_{t,t+22} = \beta_0 + \beta_0^S \times D_t + \beta_D RV_{t-1,t} + \beta_D^S D_t \times RV_{t-1,t} + \beta_W RV_{t-5,t} + \beta_W^S D_t \times RV_{t-5,t} + \beta_M RV_{t-22,t} + \beta_M^S D_t \times RV_{t-22,t} + \varepsilon_{t,t+22},$$

In which RV: The volatility of market value, ND: virtual variable for consumer preferences. Structural equation modeling was used to analyze the data.

Results

To examine the impact of information quality on predicting future stock market value, the following model was used in the Tehran Stock Exchange.

$$Market\ value\ volatility_{it} = \beta_{.} + \beta_{1} Quality\ of\ information + \varepsilon ij$$

Logistic regression results are presented in Table 1. In logistic regression analysis to assess the goodness of fit of the model, likelihood ratio test (LR) is used that its statistic is Chi-square. So, here is the value equivalence to F statistic in linear regression analysis. Likelihood ratio is calculated based on the difference in the amount of deviations i.e. deviation without prediction variable in model minus deviation despite of existing prediction variable in the model. According to the table above, the model significance was zero and the error was smaller than 0.05, so goodness of fit was acceptable.

Table 1. The results of logistic regression.

Research model	$Market\ value\ volatility_{it} = \beta_{.} + \beta_{1} Quality\ of\ information + \varepsilon ij$		
Research variables	Coefficient	Z statistic	Sig.
Fixed coefficient	-3.745	-8.456	0.00
Quality Information	0.881	11.317	0.00
Likelihood ratio statistics	40213		
Probability of likelihood statistics	0.00		
Mac Fadan determination coefficient	0.577		
Hosmer and Lemeshow statistics	2.296		

Probability of Hosmer and Lemeshow statistics	0.085

Likelihood Ratio Test

The McFadden determination coefficient was 0.459 means that the independent variable explains about 46% of the dependent variable changes. The most important statistic for significance test is presence of each independent variable in the model that can be followed by a significant level. Z statistics is equal to t-Student test in linear regression. In Wald statistic interpretation, if the value of this statistic for each variable is small than 0.05 is significant in that case, we conclude that the variable in the model was useful and meaningful impact. To evaluate the fit between the observed and waited cases, Hosmer and Lemeshow test is used. The significant level was more than 0.05 (0.085). According to the results presented in Table 1, as variable coefficient of information quality was 0.881 and due to the significant level of Z test (0.00) were significant, So, there is significant effect between market value volatility and thus, information quality. This means that information quality has a significant effect on predicting future stock market volatility in the Tehran Stock Exchange. The following model was used to investigate the effect of investors to predict future volatility in the market value of stock on the Tehran Stock Exchange.

$$Market\ value\ volatility_{it} = \beta_{.} + \beta_{1} Investor\ preferences + \varepsilon ij$$

Results of the model are shown in Table 2. Due to table, the significant level of significance of likelihood ratio test of model was zero and smaller than 0.05 errors, so goodness of fit of model was acceptable.

Table 2. The results of logistic regression

Research model	$Market\ value\ volatility_{it} = \beta_{.} + \beta_{1} Investor\ preferences + \varepsilon ij$		
Research variables	Coefficient	Z statistic	Sig.
Fixed coefficient	-2.635	-8.629	0.00
Investors preferences	0.481	11.412	0.00
Likelihood ratio statistics		219.5	
Probability of likelihood		0.00	
Mac Fadan determination coefficient		0.431	
Hosmer and Lemeshow statistics		2.651	
Probability of Hosmer and Lemeshow statistics		0.103	

Likelihood Ratio Test

The McFadden determination coefficient was 0.431 means that the independent variable explains about 43% of the dependent variable changes. The most important statistic for significance test is presence of each independent variable in the model that can be followed by a significant level. Z statistics is equal to t-Student test in linear regression. In Wald statistic interpretation, if the value of this statistic for each variable is small than 0.05 is significant in that case, we conclude that the variable in the model was useful and meaningful impact. According to the results presented in Table 2, as variable coefficient of investors preferences was 0.481 and due to the significant level of Z test (0.00) were significant, So, there is significant effect between market value volatility and thus, investors preferences. This means that investors' preference has a significant effect on predicting future stock market volatility in the Tehran Stock Exchange. By two factors: the quality of information and investor preferences can present a good predictor of volatility in the market value of shares on the Tehran Stock Exchange for future periods. Results of the model are shown in Table 3. Due to table, the significant level of significance of likelihood ratio test of model was zero and smaller than 0.05 errors, so goodness of fit of model was acceptable.

Table 3. The results of logistic regression

Research model	$Market\ value\ volatility_{it} = \beta_{.} + \beta_{1} Quality\ of\ information + \beta_{2} Investor\ preferences + \varepsilon ij$		
Research variables	Coefficient	Z statistic	Sig.
Fixed coefficient	-4.998	-9.407	0.00
Information quality	0.531	9.015	0.00
Investors preferences	0.374	6.009	0.00
Likelihood ratio statistics		294.47	
Probability of likelihood statistics		0.00	
Mac Fadan determination coefficient		0.684	
Hosmer and Lemeshow statistics		4.266	
Probability of Hosmer and Lemeshow statistics		0.175	

Coefficient values is between 1 and 0, and if is closer to 1, it is better. In this study, The McFadden determination coefficient was 0.684 means that the independent variable explains about 68% of the dependent variable changes. The most important statistic for significance test is presence of each independent variable in the model that can be followed by a significant level. Z statistics is equal to t-Student test in linear regression. In Wald statistic interpretation, if the value of this statistic for each variable is small than 0.05 is significant in that case, we conclude that the variable in the model was useful and meaningful impact. According to the results presented in Table 3, as variable coefficient of information quality was 0.531 and due to the significant level of Z test (0.00) were significant, So, there is significant effect between market value volatility and thus, information quality. This means that there is significant effect between information quality and future stock market volatility in the Tehran Stock Exchange. When, both information quality and investors preferences variables are in the model, determination coefficient was 0.684. When, information quality and investors preferences variables are alone in the model, this means that by two factors of information quality and investors preferences variables can present proper prediction of stock market volatility on the Tehran Stock Exchange for future periods.

Discussion and Conclusion

The aim of this study was to investigate the effect and information quality and investors preferences to volatility prediction accuracy of market stock value in "the companies listed in Tehran Stock Exchange", Iran. According to the results of this study can be said that information quality has a significant effect to predict future volatility in the market value of stock on the Tehran Stock Exchange. However, if providing accurate information is more feasible, increases information quality and therefore, one can adopt more accurate decisions. Clearly, better information quality has more cost. To take a look at the results of the second hypothesis, the preferences of investors has a significant effect to predict future volatility in the market value of stock on the Tehran Stock Exchange. Investors even before obtaining the money foster different management strategies to invest the money in mind (black box of buyers), and finally, select an option that is for them in every way according to the minds. Many factors affect the decision of individuals to invest in the stock market that these factors can divide into two categories: internal and external factors (Sinai et al., 2005).

The external factors are the economic, political, cultural condition and otherwise, such as: the advertisement of the exchange, corporate internal affairs and so on. However, since, the effect of these factors has been discussed by many analysts, the internal factors effect may allocate special place. Generally, individuals with respect to risk and return try to invest, to invest their money in places that earn higher incomes in their mind (Chen, 2013).

Therefore, the information quality and investor preferences can offer a good predictor of volatilities in the market value of stock on the Tehran Stock Exchange for future periods and this indicates a lack of understanding of this concept and Iranian capital market investors and activists. According to the results of

research, it is recommended to users of financial reports to consider information quality as positive factors influencing stock return volatility into the economic decisions. Also, it is suggested to company executives to provide a model to predict market volatility based on investors preferences that in which investors interests can be used for both the study and then, to predict market volatility.

Conflict of interest

The authors declare no conflict of interest

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