THE EFFECT OF Earnings and INFORMATION QUALITY ON STOCK TRADING IN TEHRAN STOCK EXCHANGE

Bibi Zahra Sanagostar,
MSc of Finance, Department of Management, Neyshabur Branch, Islamic Azad University, Neyshabur, Iran
Abdorreza Asadi,
Assistant Prof. of Finance, Department of Management, Neyshabur Branch, Islamic Azad University, Neyshabur, Iran
Ahmad Zendehdel,
Assistant Prof. of Applied Statistic, Department of Mathematic, Neyshabur Branch, Islamic Azad University, Neyshabur, Iran

Abstract. The present study attempted to investigate the effect of earning's quality and information quality on stock trading in accepted companies in Tehran Stock Exchange (TSE). Statistical population of the study included companies of 10 accepted industries in TSE, which led to a sample of 99 companies during 2008 to 2012. To test the hypotheses, multivariate regression analysis of panel and non-panel statistical tests were used. The findings of the first model showed that the earning's persistence, earning's response coefficient, and the quality of accruals had a significant effect on the ratio of trading days. Furthermore, annual stock returns didn’t have a significant effect on the ratio of trading days. Following this, the results of the second model indicated that the earning's persistence and quality of accruals had no significant effect on the turnover ratio of stock trading. Besides, the earning's response coefficient and annual stock returns had significant effect on the stock trading turnover.

Keywords: Earnings Persistence, Earning Response Coefficient, Quality of Accruals, Stock Trading.
Introduction. Financial reporting and accounting system play a vital and critical role in providing the information needed for decision making by investors and subsequently, in proper performance of capital markets. As a result, supplying information needs of investors can be regarded as one of the main objectives of financial reporting. Information resulting from the accounting system assists investors in evaluating the future performance of the company and its related risks; therefore, such information is useful for valuing companies. However, the quality of provided information is of essential importance, so that information with special features, including relevance, reliability, etc. is considered as important in the decision-making process [1].

Quality of financial reporting can be defined as the ability of financial statements in conveying the information of the company’s operations specially predicting expected cash flows to investors [2]. Timeliness of financial reports is a significant part of quality of presenting companies’ financial information, because it is timeliness of the information that can lead to better and more practical use of information by users and finally, it results in transmitting the final product to the accounting system. Therefore, reporting speed in the sense of delay in presentation of financial reports of companies should be greatly considered by the providers of financial reports. Increasing the reporting speed due to timely reporting of data to make economic decisions by investors can lead to greater transparency of financial information and consequently, to higher transparency of the capital market. This can in turn have a major impact on the attractiveness of financial and capital markets. Since financial reporting is a reliable and credible tool which is publicly available, in case of being timeliness, it can decrease the risk of adverse selection by investors through reducing private and confidential information. It can be assumed that providing more timely information will result in reducing information asymmetry among investors [3]. As a result, it would have great help in obtaining the confidence of investors and market participants who will in returns increase the volume of transactions and reduce the cost of capital and ultimately will lead to more liquidity.

Literature review. The role of information in the decision-making process is obvious. Economic decisions require information that can be used to allocate available resources in the best way possible. One of the ways to obtain this information is the use of annual financial statements. Financial statements which are comprehensively and widely used are believed to be the best way to provide financial information to the users. General purpose of financial statements is addressing the needs of consumers, including investors. Actual and potential investors are mainly interested in the evaluation of a company’s investment properties. The characteristics of an investment involve factors such as risk, efficiency, dividends, security of investment, liquidity, growth, and so on [4]. Qualitative characteristics are that information features leading to the usefulness. For the data to be perceived qualitative, they should have a series of qualitative characteristics. These characteristics make information provided in financial statements useful for users regarding evaluation of financial status, financial performance, and financial flexibility of business units [5].

One of the fundamental prerequisites for gaining the investors and creditors’ confidence in the economic productive activities is providing and presenting information that is practical in making economic decisions. Since financial decisions should be made based on the risk and returns, considering a specified level of risk is important. One of the factors affecting the risk refers to the liquidity of the stock, since the level of stock liquidity affects the investors’ decisions in forming a portfolio of investment. To put differently, rational investors demand a higher risk premium for shares that have less liquidity and will have higher expected rates of returns [6].

Earning's persistence evaluates the continuity and persistence of earning's period to period. High earning persistence is considered as a feature of high-quality accounting. Earning's response coefficient measures the abnormal market returns in response to the company’s least expected reported profit. In the investors' points of view, quality of accruals is defined as the proximity of accounting profit to cash. Therefore, poor quality of accruals leads to an increase in uncertainty and consequently, investment risk will rise [7].

Financial markets react to information as follows: The first reaction refers to the effects of the price information on securities, which have been the subject of many accounting studies; however, market also reacts to information in terms of volume effects but no research has been conducted in this area. Such effects are found in the liquidity indicators and so far; less attention has been devoted to them by accounting researchers [8].

Liquidity is one of the concerns of those who buy or sell their shares or manage trading infrastructures. Stock liquidity is believed to be one of the most important indicators in investigating market status. Higher liquidity in the stock market represents its success in transparency of the information and the close price of the securities to their intrinsic value [9]. Stock liquidity is not probably the remarkable issue for investors in big and famous companies compared to TSE investors. Due to the lack of mechanisms in providing liquidity (market performance, big difference in disparity of buying and selling prices, and information asymmetry) TSE is placed among the non-cash stock exchange in the world.

Liquidity of stocks refers to its possibility of being sold fast. If a share can be sold faster and at a lower cost, it could be stated that the share is highly liquidated. Frequent traded securities (on a daily basis) are greater liquidated than securities traded with a limited or low frequency [10]. Information and motivational issues prevent efficient allocation of resources in the capital markets. Disclosure of information and strategies to increase disclosure value among managers and investors play an important role in reducing these problems. One of the most important economic challenges is the allocation of savings to the investment opportunities. While companies and savers are willing to trade with each other, allocation of savings to investment opportunities is complicated for two reasons. Firstly, managers often have more information than savers regarding the value of investment opportunities. In addition, they are more inclined to exaggerate the value of their own company. In this case, savers face with the information problem after
investment. Secondly, the company receiving investments may abuse the investors’ rights that will lead to agency problems [11]. In recent years, due to different factors affecting the stock market (recent financial crises and weak performance of the capital market), market liquidity has faced turbulent times. In some years and periods, due to the sudden surge and drop in prices, stock liquidity has been very high whereas it has been too low in others. Upon receiving good news about the country’s political and economic issues, liquidity increases and by getting upsetting news, we face a liquidity shortage and decrease. In such financial market, investors are willing to invest in the private companies out of stock with seemingly high returns as well as alternative markets such as gold, real estate, and currency; in this regard, TSE has been seriously hurt. Therefore, the following question is raised: Do earning and information qualities affect TSE transactions?

Salavei [12] aimed to investigate the relationship between the stock liquidity and the quality of financial information in a study titled “Quality of Financial Information and Stock Liquidity.” The results indicated a positive relationship between quality of information and stock liquidity.

In another research, Jeffrey [13] checked the sensitivity of stock returns to unexpected changes in the cash market in a study titled “The Effects of Information Quality on Stock Liquidity Risk.” The findings of his study revealed that high quality of data reduces liquidity risk. In addition, when changes in market liquidity are high, there is a negative relationship between quality of information and stock liquidity risk [13].

Bardos [14] examined the relationship between the quality of information and liquidity. He specifically investigated the relationship between the restated financial statements and liquidity. Liquidity criterion in this research was the lack of AMIHUD liquidity ratio. The results showed that to renew the presentations that were associated with a reduction in earning's quality, the lack of liquidity increases by several months before announced restatements and a year after the restatement; it still remains at a high level [14]. Bhattacharya, et al [15] aimed to study the relationship between the quality of benefit and stock liquidity of New York Stock Exchange and NASDAQ stock market in the period of 1998-2005, and concluded that the low quality of earnings increases information asymmetry and thus, reduces the liquidity of the stock [15].

Following this, Foroughi and Ghajavand [16] studied the effect of quality of information on stock liquidity in companies in TSE (Tehran Stock Exchange) list. To determine the quality of information, two variables, including the quality of accruals and predictive accuracy of earnings per share were used. To measure the predictive accuracy of the earnings per share, the random stepwise model came into use and to calculate the quality of accruals, a model developed by Francis, et al [17] was applied. In this research, 104 companies in TSE list in the period of 2002-2011 were studied. To test the hypotheses, multivariate regression models were used. According to the results of the research, there was a positive relationship between the quality of accruals and stock liquidity and also a positive relationship between the predictive accuracy of earnings per share and stock liquidity.

Nikbakht and Ebrahimi [18] studied the impact of the quality of financial reporting on stock liquidity of companies recorded in TSE list. Using statistical methods (combined data) for 90 companies, they concluded that regardless of the stock price, size of the company, volatility, and stock turnover ratio, there was no significant relationship between the financial reporting quality and stock liquidity of the company.

Dastgir, et al [19] carried out a research titled “The Role of Quality of Earnings in Increasing Stock Liquidity of the Companies in TSE List.” In this study, earning’s quality was used based on earning persistence, while two trading criteria (trading days and trading relative volume) as well as two information criteria (relative Rial depth and relative gap of stock purchase and sale) were used to measure stock liquidity. The results indicated that there was no significant relationship between the earning's quality based on earning's persistence and liquidity measures.

Moradzadehfard, et al [20] conducted a research titled “The role of Accruals Management in Stock Liquidity of Companies in TSE List” and indicated that accrual's management had a negative effect on the stock liquidity of companies, so that the management of higher projects led to information asymmetry and higher transaction costs. In this case, the tendency of traders without knowledge of the company’s shares greatly reduces and consequently; the company’s stock liquidity goes down.

Research hypotheses. In the present research the following hypotheses were proposed regarding literature review:

H1: Earnings persistence has a significant effect on the ratio of stock trading days.
H2: Earnings response coefficient has a significant effect on the ratio of stock trading days.
H3: The quality of accruals has a significant effect on the ratio of stock trading days.
H4: Annual stock returns has a significant effect on the ratio of stock trading days.
H5: Earnings persistence has a significant effect on the stock trading turnover.
H6: Earnings response coefficient has a significant effect on the stock trading turnover.
H7: The quality of accruals has a significant effect on the stock trading turnover.
H8: Annual stock returns has a significant effect on the stock trading turnover.

Methodology. Since the results of the current study can be used by the capital market analysts and investors to evaluate the company’s performance, the study is regarded as a practical research type. Moreover, standard setters and regulators of stock exchange may apply the results in setting standards and new rules associated with companies when review of existing rules and standards seems necessary. The present study sought to investigate the causes and relationships between independent as well as dependent variables through regression models; therefore, it is a correlational-causal research regarding its nature and methodology. In fact, in a correlational study the relationship
between variables is analyzed based on research objectives and in a comparative-causal research the researcher investigates potential causes of dependent variable and seeks to find out the probable causes through their effects.

**Definition of research variables. Independent Variables.**

Accruals Quality: Accrual’s quality is measured based on a model proposed by Francis et al [17]. The regression model is used to estimate accrual quality of the company i in the year t.

Relationship (1)

\[ TCA_{i,t} = \Phi_{1i} + \Phi_{2i}CFO_{i,t-1} + \Phi_{3i}CFO_{i,t} + \Phi_{4i}CFO_{i,t+1} + \Phi_{5i}\Delta REV_{i,t} + \Phi_{6i}PPE_{i,t} + \varepsilon_{i,t} \]

\( TCA_{i,t} \): Total current accrual items estimated by relationship (2)

\( \Delta TCA_{i,t} \): The company’s sale’s changes

\( PPE_{i,t} \): Net properties, plants, and equipment

\( \Delta TCA_{i,t} \): Total current accrual items estimated by relationship (2)

Relationship (2)

\[ \Delta TCA_{i,t} = \left( \Delta CA_{i,t} - \Delta Cash_{i,t} \right) - \left( \Delta CL_{i,t} - \Delta STDEBT_{i,t} \right) \]

\( \Delta CA_{i,t} \): Changes in current assets

\( \Delta Cash_{i,t} \): Changes in cash

\( \Delta CL_{i,t} \): Changes in current debts

\( \Delta STDEBT_{i,t} \): Changes in payment documents or other interest-bearing short-term debts

\( CFO_{i,t} \): Company’s cash flow in every year estimated by relation (3):

Relationship (3)

\[ CFO_{i,t} = NIBE_{i,t} - TA_{i,t} \]

\( NIBE_{i,t} \): Net benefits before unexpected items

\( TA_{i,t} \): Total accrual items of the company in every year estimated by relationship (4)

Relationship (4)

\[ TA_{i,t} = TCA_{i,t} - Dep_{i,t} \]

\( Dep_{i,t} \): Company’s depreciation costs

\( \varepsilon_{i,t} \): Remaining component of relationship (1) which is the criterion used to determine accrual quality.

According to the model of Francis et al [17] and accrual’s quality in year t, standard deviation of company remaining components in relationship (1) will be between year t and t-2 calculated by relationship (5):

Relationship (5)

\[ AQ = \sigma = \sqrt{\frac{\sum_{n=t-2}^{t} (\varepsilon_{i,n} - \bar{\varepsilon})^2}{2}} \]

\( \bar{\varepsilon} \): Mean of remaining components during the year t to t-2

Earning’s persistence: The higher earning’s persistence, the more ability the company will have to maintain current earnings and it is assumed that earning’s quality of the company will be also higher [7].

Variable of earning’s persistence is measured based on models proposed by Dechow & Dichev [21], Francis et al [17], and Kohlbeck & Warfield [22].

Relationship (6)

\[ Earn_{i,t} = \alpha_0 + \alpha_1 Earn_{i,t-1} + \alpha_2 MB_{i,t} + \varepsilon_{i,t} \]

\( Earn \): Special earnings before taxes

\( MB \): market value ration to book value

Earning response coefficient: Earning response coefficient is the returns regression slop (or unusual returns) compared to changes in the earnings (or unexpected earnings). Earning response coefficient +has been used in texts as an indicator for accounting earning information content, because it measures representation of earnings to returns [7].

Variable of earning response coefficient is measured based on models proposed by Kormendi & Lipe [23] and Schipper & Vincent [24].

Relationship (7)

\[ Returns_{i,t} = \alpha_0 + \alpha_1 Earn_{i,t} + \varepsilon_{i,t} \]

\( Returns \): annual stock returns
\( \Delta \text{Earn} \): (Percentage of) changes in earnings before taxes

Annual Stock Returns: Benefits of ownership may be paid to shareholders in different forms and the most important forms include increasing capital through inventory (Bonus shares) and increasing capital through receivables and cash \([10]\).

Investors are interested in shares with high returns and pay attention to this issue when they are purchasing shares; therefore, it can be assumed that this factor has a special importance for investors and affects companies' trading volume \([25]\). Returns rate is calculated using the following formula:

\[
\begin{align*}
\text{Relationship (8) } \\
\frac{r_{it}}{\alpha} = \left[ \frac{(D_{it} + P_{it}) (1 + \alpha + \beta)}{P_{t-1} + \alpha} \right] - \left( \frac{P_{t-1} + \alpha}{P_{t-1} + \alpha} \right) \times 100
\end{align*}
\]

Where:
- \( r_{it} \): Stocks returns of company \( i \) in the year \( t \)
- \( P_{it} \): Stock price at the end of the period
- \( P_{t-1} \): Stock price at the early period
- \( \text{Dps} \): Cash earning of each share
- \( \alpha \): Percentage of capital increase from receivables and cash
- \( \beta \): Capital increase from inventory and retained earning

\textbf{Dependent Variables}

- Trading days ratio: The higher this ration, the greater liquidity it represents.
  
  \text{Relationship (9) } \\
  \text{Trading days ratio} = \frac{\text{Days in which shares are traded}}{\text{Total annual working days}}

- Stock Market Turnover: This criterion is obtained by dividing value of total shared traded by the stock market value. The higher this ration, the greater liquidity is represented.
  
  \text{Relationship (10) } \\
  \text{Stock trading turnover} = \frac{\text{Value of total shares traded in the year t}}{\text{Stock market value}}

\textbf{Control Variables}

- Industry Type: In the present research companies listed as members of Tehran Stock Exchange are categorized into ten groups: industrial group of metal or mining, chemicals, machinery and equipment, electrical appliances, basic metals and related products, pharmaceutical companies, other mining and quarrying, coal mining, non-metallic mineral extraction and machines, and component manufacturing.
- Company Size: company size includes the logarithm of company assets at the end of each financial year.
  
  \text{Relationship (11) } \\
  \text{SIZE} = \ln (\text{ASSETS})

\textbf{Research Model}

To examine the hypotheses of the research, two linear regression models were used as follows:

\text{Model 1:} \\
\text{Model 2: }

\[
\begin{align*}
\text{LI}_1 &= \beta_0 + \beta_1 \text{Earn} + \beta_2 \text{ERC} + \beta_3 \text{AQ} + \beta_4 \text{Return} + \beta_5 \text{SIZE} + \beta_6 \text{IND} + e_{ij} \\
\text{LI}_2 &= \beta_0 + \beta_1 \text{Earn} + \beta_2 \text{ERC} + \beta_3 \text{AQ} + \beta_4 \text{Return} + \beta_5 \text{SIZE} + \beta_6 \text{IND} + e_{ij}
\end{align*}
\]

Model1 is applied in order to investigate the effect of earning persistence, earning response coefficient, accruals quality, and annual stock returns on trading days. Also, model2 is used to evaluate the effect of earning persistence, earning response coefficient, accruals quality, and annual stock returns on the stock trading turnover.

Given the above mentioned models, variables are represented as follows.

\text{LI}_1: \text{Liquidity (trading days ration)}\]  
\text{LI}_2: \text{Liquidity (stock trading turnover)}\]  
\text{Earn}: \text{Earning’s persistence}\]  
\text{ERC}: \text{Earning response coefficient}\]  
\text{AQ}: \text{Accruals Quality}\]  
\text{Return}: \text{Annual stock returns}\]  
\text{Size}: \text{Company size}\]  
\text{IND}: \text{Industry type}\]

\textbf{Statistical population}. Statistical population of the study consisted of all companies in TSE list in industrial
group of metal or mining, chemicals, machinery and equipment, electrical appliances, basic metals and related products, pharmaceutical companies, other mining and quarrying, coal mining, non-metallic mineral extraction and machines, and component manufacturing. In addition, the companies were required to:

1. It should be listed in the stock exchange market since 2008 and their fiscal year must be ended in March;
2. Have access to information required in this research;
3. Have no pauses in activities and should not have changed their financial period;
4. The companies were supposed not to be part of the financial intermediation company
5. Not to have consolidated financial statements.

**Statistical sample.** In the current study, 99 companies over the period of 2008-2012 were selected as the sample of the study. Besides, the intended financial data were extracted from TSE software, financial statements, and notes related to the studied companies.

**Research findings**

**Descriptive Statistics**

As it is shown in Table 1, over the study period and regarding the companies studied, the ratio of trading days achieved an average rate of 0.540. Standard deviation of this variable was equal to 0.271. In addition, the stock trading turnover was 0.175 with a standard deviation of 0.367. The reported statistical for earning's persistence indicated that this variable had a value equal to 0.260 and 0.974 for mean and standard deviation, respectively. Following this, the mean of the earning's response coefficient was -1619649.3 and its standard deviation was equal to 16172092.1.

**Table 1. The Results of the Descriptive Statistics of Research**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio of Trading Days</td>
<td>495</td>
<td>0.5</td>
<td>0.2</td>
<td>12</td>
<td>84</td>
</tr>
<tr>
<td>Trading Turnover</td>
<td>495</td>
<td>0.1</td>
<td>0.3</td>
<td>10x6.52</td>
<td>4</td>
</tr>
<tr>
<td>Earnings Persistence</td>
<td>495</td>
<td>0.2</td>
<td>0.9</td>
<td>3.130</td>
<td>47</td>
</tr>
<tr>
<td>Earnings Response Coefficient</td>
<td>495</td>
<td>161</td>
<td>72092.1</td>
<td>126340095.9</td>
<td>43</td>
</tr>
<tr>
<td>Quality of Accruals</td>
<td>495</td>
<td>177</td>
<td>361</td>
<td>0.21</td>
<td>39172.9</td>
</tr>
<tr>
<td>Annual Stock Returns</td>
<td>495</td>
<td>31</td>
<td>79.51</td>
<td>-</td>
<td>73</td>
</tr>
<tr>
<td>Size of the Company</td>
<td>464</td>
<td>15</td>
<td>3.81</td>
<td>-</td>
<td>54</td>
</tr>
</tbody>
</table>

**Related Inferences about the Research Hypotheses**

**Research model's fitness**

Given that variables of the intended regression model refer to 99 companies over five years, before testing the model, it should be determined that whether the regression equation involves the width of joint elevations and slopes shared by sections or not. The tests used for this purpose included integration test or F-Limer test. The null hypothesis is based on homogeneity of sections and width of joint elevations. Table 2 shows the test results of this test.

**Table 2. Test Results of the Integration Capabilities for the First Model of the Research**

<table>
<thead>
<tr>
<th>P-value</th>
<th>Denominator Degrees of Freedom</th>
<th>Numerator Degrees of Freedom</th>
<th>F-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.7283</td>
<td>465</td>
<td>20</td>
<td>0.7887</td>
</tr>
</tbody>
</table>

Given that in table 2 p-value = 0.7283 > 0.05, homogeneity hypothesis regarding sections and width of joint elevations is accepted and use of the width within different elevations of different items in the above-model is not critical. In other words, regression model fitness is no longer needed in panel form.

Hausman specification test or random effects test is another test which should be measured before model fitness. Statistics of this test is chi-square and its null hypothesis is based on random model effects. Since the model is consistent with integration of homogenous sections and is not a panel model, there is no need to conduct Hausman test.

Given what was mentioned above, table 3 represents the results of model fitness through least squares regression.
Table 3. The Results of the Regression Model of OLS for the First Model of the Research.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter Estimation</th>
<th>T-statistic</th>
<th>P-value</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>VIF</td>
</tr>
<tr>
<td>Fixed Regression</td>
<td>0.425</td>
<td>9.750</td>
<td>0.000</td>
<td>1.124</td>
</tr>
<tr>
<td>Earnings Persistence</td>
<td>0.048</td>
<td>3.837</td>
<td>0.000</td>
<td>1.155</td>
</tr>
<tr>
<td>Earnings Response Coefficient</td>
<td>1.521×10^-9</td>
<td>-1.986</td>
<td>0.048</td>
<td>1.666</td>
</tr>
<tr>
<td>Quality of Accruals</td>
<td>1.577×1</td>
<td>4.816</td>
<td>0.000</td>
<td>1.515</td>
</tr>
<tr>
<td>Annual Stock Returns</td>
<td>1.004×1</td>
<td>1.281</td>
<td>0.052</td>
<td>1.333</td>
</tr>
<tr>
<td>Size of the Company</td>
<td>0.005</td>
<td>0.201</td>
<td>0.041</td>
<td>0.226</td>
</tr>
<tr>
<td>Type of Industry</td>
<td>-0.003</td>
<td>-0.825</td>
<td>0.120</td>
<td>1.160</td>
</tr>
</tbody>
</table>

| Coefficient of Determination \((R^2)\) | 0.117 |
| Adjusted Coefficient of Determination \((R_{adj}^2)\) | 0.106 |
| Durbin-Watson Statistics | 2.11 |
| F-statistic              | 10.735 |
| P-value                  | 0.000 |

The F-statistic which is equal to 10.735, investigates significance of the model. Given that p-value associated with this statistic is 0.000, which is less than 0.05 (significance level of the test), the null hypothesis is rejected at the level of 0.05. In other words, with 95% of confidence, it can be argued that the simultaneous effect of independent and control variables in the model on the ratio of trading days is significant.

The t-statistics reported for each of the independent variables also test the hypotheses of the research. Given t-statistics and P-value corresponding to each variable, significance or non-significance of research hypotheses is as follows:

As t statistics of earnings stability is 3.837 and p-value is 0.000 smaller than 0.05, t statistics of earnings response ratio is -1.986 and its corresponding p-value is 0.048 smaller than 0.05 and t-statistics of accruals quality is 4.816 and p-value is 0.000 smaller than 0.05. Thus, with confidence interval 95%, the first, second and third hypotheses are supported.

Following this, the t-statistic of annual stock returns is 1.281 and its p-value is equal to 0.201 which is greater than 0.05; therefore, with 95% of confidence, the fourth hypothesis is rejected.

It should be mentioned that the above results are valid as long as the basic assumptions of regression hold. According to Durbin-Watson statistic corresponding to the model represented in Table 3 (2/11), the absence of autocorrelation in the desired model can be ensured. In the above model, the values of tolerance for all independent variables were greater than 0.5 which shows lack of co-linearity. If the value of VIF is less than 2, it also states the absence of a co-linear relationship. To this end, in the above model, the values of VIF for all independent variables are less than 2, which again approve lack of co-linearity among independent variables. If points mapped on the normal probability diagram are 45 degrees around an error, error statements are normal. In the present study, the results indicate normal error statements.

The first step in fitness of the regression model of trading turnover refers to investigating the homogeneity of sections (panel form of the model) in the form of a test referring to integration capabilities. Table 4 shows the results of the integration capabilities for the second model of the research.

Table 4. Test Results of the Integration Capabilities for the Second Model of the Research

<table>
<thead>
<tr>
<th>P-value of Freedom</th>
<th>Denominator Degrees of Freedom</th>
<th>Numerator Degrees of Freedom</th>
<th>F-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2×10^-16</td>
<td>465</td>
<td>20</td>
<td>28.601</td>
</tr>
</tbody>
</table>

In the above Table p-value = 2.2×10^-16 < 0.05 and homogeneity of cross section and intercepts is rejected and different intercepts are used for different times in the above model. In other words, the fitting of regression model is performed as panel. To investigate the random or fixed effects in the model, Hausman test came into use and its results are shown in Table 5.
The amount of p-value corresponding to Hausman test for the second model of the research is obtained 0.000 that is smaller than the significance level of the test (0.05). Thus, the hypothesis of random effects of the models is rejected with 95% of confidence, and the research model should be fitted with fixed effects.

According to the results of the above tests, the research model is fitted using Least-Squares Regression panel. The results of the regression model with fixed effects of FE for the second model of the research are shown in Table 6. It is noteworthy that due to the normal stock trading turnover, the remaining of the fitted model is not normal as well, and the fundamental hypothesis is not held. For this reason, by use of turning Johnson in Minitab software, stock trading turnover has been first normalized and then; the model has been fitted to the transferred data.

F statistics is 16.468 and its corresponding p-value is 0.000 smaller than 0.05 (significance level) and H0 is rejected at the level 0.05 and by confidence interval 95%, the simultaneous effect of independent and control variables on stocks trade turnover is significant.

Based on t-statistics and p-value of each of variables, significance and non-significance of hypotheses are as followings.

As t statistics of earnings stability is 1.446 and p-value is 0.149 bigger than 0.05, t statistics of accruals quality is 0.203 and p-value is 0.839 bigger than 0.05. Thus, with confidence interval 95%, the fifth, and seventh hypotheses are rejected.

The t-statistic of earnings response coefficient is -9.602 and its corresponding p-value is equal to 0.000. Besides, the t-statistic of annual stock returns and its p-value are -2.589 and 0.010 respectively. Since p-value is less than 0.05, with 95% of confidence the sixth and eighth hypotheses are accepted.

It should be mentioned that the above results are valid as long as the basic assumptions of regression are held. The t-statistics and p-value of each of variables, significance and non-significance of hypotheses are as followings.

As t statistics of earnings stability is 1.446 and p-value is 0.149 bigger than 0.05, t statistics of accruals quality is 0.203 and p-value is 0.839 bigger than 0.05. Thus, with confidence interval 95%, the fifth, and seventh hypotheses are rejected.

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It should be mentioned that the above results are valid as long as the basic assumptions of regression are held. Given the amount of Durbin-Watson statistics (1/51), it can be concluded that there is no autocorrelation between error statements. In the research it was observed that the values of tolerance for all independent variables were greater than 0.5. In addition, the values corresponding to VIF statistics were less than 2 for all variables. Therefore, the hypothesis related to the lack of co-linearity among the variables of the fitted model is held. If points mapped on the normal probability diagram are 45 degrees around an error, error statements are normal. In the second model of the study the results indicate normal error statements.

Discussion and conclusion. In the model (trading days ratio), there is a significant relationship between the information quality (earning's persistence, earning's response coefficient, and quality of accruals) and trading days' ratio. Regarding the significant effect of earning's persistence on trading days' ratio, it can be concluded that if profits
have more persistence and sustainability, investors and shareholders get more confidence about their company’s performance in the capital market, and most of their expectations would be met. Moreover, investment risk declines and the cost of capital will come down, and more investors will tend to purchase and do stock deals. In other words, earning’s persistence has an impact on desire to purchase as an indicator of liquidity; thus, it would result in increasing trading days’ ratio.

There is also a significant relationship between the earning’s response coefficient and trading days' ratio in the present model (trading days' ratio). This relationship indicates that the higher earning's response coefficient is, the greater the sensitivity of shareholders’ stock liquidity would be. Shareholders tend to have the stock deal with minimal changes in profits and consequently, stock liquidity increases. Since there is a considerable relationship between the quality of accruals and trading days' ratio, having high information quality and less earnings management will result in less information asymmetry and risks of the investments. Moreover, the cost of capital comes down, which leads to market efficiency and as a result; more investors are attracted to the capital market. Ultimately, the number of stock trading will rise and trading days' ratio will increase (stock liquidity) as well.

There was no significant relationship between the annual stock returns and trading days' ratio because a greater part of the output is influenced by prices; and no relationship was found in the ratio of trading days, which is defined as the number of the days in which stocks are traded.

In the model of stock trading turnover there was a positive relationship between the earning’s response coefficient and stock trading turnover. This model as well as the trading days' ratio model, shareholders tend to deal with the smallest change in profit.

Significance of the stock returns represents that the returns whose basic part includes price, is highly significant, since the main part of returns consists of price.

In the stock trading turnover, there was no significant relationship between the information quality (earning’s persistence and quality of accruals) and stock trading turnover. Therefore, it can be argued that there is a relationship between the information quality and trading days' ratio whose main part of tends to be frequency of trading. However, information quality has no relationship with the stock trading turnover, whose main part consists of price. To state it differently, it is not only the information quality of the company that affects the stock turnover but some other factors such as political issues, sanctions, sudden surge and drop in prices, the country’s capital market efficiency, and changes of government will also affect stock trading turnover. As a result, there is no significant relationship between information quality (quality of accruals) and stock trading turnover. In addition, the effect of information quality (earnings persistence) on stock trading turnover whose main part is price is not significant.

Future Research. Given the results, the followings are specific areas in need of further research:
1. It is recommended that regulators and administrators try to develop strategies and standards to aid the improvement of information quality.
2. It is suggested to investors that apart from information quality, they should try to consider other factors, including political issues, inflation, sanctions, and sudden surge and drop in prices and their effect on liquidity.

In addition, the following topics are suggested for future research in the same area:
1. Future studies could investigate the use of other models in stock liquidity such as the difference between the purchase price and the sale of shares and the lack of liquidity.
2. The existence of the nonlinear relationship between the information quality and various measures of stock liquidity can be also investigated.

References
EXPLORING AND ANALYSING THE REPRODUCTION OF THE POWER DISCOURSE IN THE FIRST HALF OF QAJAR PAINTING ERA (CASE STUDY 1210 – 1264 AH)

Sina Naziri Hossienpour.
Department of Art and Architecture, Yazd branch, Islamic Azad university, Yazd, Iran

Abstract. The present study is aimed to explored and analyzed reproduction of power discourse in painting in the first half of Qajar era from 1210 to 1264 AH. For this purpose, the present study attempts to study the reproduction of power discourse in painting in the first half of Qajar era and its effect on paintings by the painters of this period. Therefore, in this research, we recognize and review the text and analyze the reproduction of power discourse in painting in the first half of Qajar era. The present study supports the hypothesis that painters in the first half of the Qajar reproduced the relations of power discourse in their paintings. The methodology of the research was descriptive, analytical, library and fundamental and it was found that the painters in the first half of the Qajar developed power discourse as a key element in paintings by the king and his governing board to the body of society. They have also reproduced it in their drawings. The artist knows and follows from the rule, that power, along with limiting behavior, produces possible forms of behavior; with certain elements, specific proportions, distinct combinations ,specific colors, certain movements and gestures have caused the creation of Qajar's first half century paintings and these kinds of power discourse has been reproduced in all works. Finally, the reproduction of power discourse was demonstrated in Qajar's first half century paintings. Therefore, the elements and rules are definite, and they all show the centrality, power, majesty, glory of the king and the ruling congregation.

Keywords: Qajar’ first half century painting, Discourse, Aesthetics, Power discourse, Reproduction

Introduction. The first half of Qajar painting is one of the most important periods in Iranian art history. Due to the power discourse, namely, the individuality and centrality of the king and its expansion in all affairs of society, the first half of the Qajar painters were exceptions, and they also reproduced and illustrated the greatness and power of the king in their paintings. In fact, Qajar’s first half-century painting is a brilliant era in the evolution of Iranian art, which we face with the growth of art. Indeed, the painting of this era in its forms ranges from oil painting to canvas to wall murals, illustration books, painting on tiles , painting on applied and decorative objects such as pencils, covers, decorative frames, etc., and establishes an inter-textual relationship based on the principles of Iranian cultural