The effect of firm’s performance on the stock liquidity  
(Empirical evidence: Tehran Stock Exchange)  

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Abstract: The present study examines the effect of firm’s performance on the stock liquidity in the period 2010 to 2014. This investigation attempts to answer the question whether or not the empirical performance of a company has a significant effect on the stock liquidity. The study population are all companies listed in Tehran Stock Exchange, among which a sample of 111 firms was selected with regard to predetermined criteria through the systematic removal method. The hypothesis is that the performance of companies has positive and significant effect on the liquidity. A multivariate regression model was used to test the research hypothesis, and the results of testing the hypothesis shows that the empirical performance of a firm affects the stock liquidity both directly and significantly. Hence, the research hypothesis is confirmed.  

Keywords: Stock liquidity, Performance, Return on Assets, Investment decisions.  

Introduction  
Stock liquidity is one of the most important issues in finance and investment. Stock as one of the financial assets has both organized and unorganized markets for the purchase and sale. A stock is of the so-called high liquidity when it has greater rate and number of transactions concerning a firm’s stock. In other words, a stock transacted more quickly it will be more capable of liquidity, hence such a stock is referred to have a high liquidity (Tehrani, 2011). Among other variables that can be associated with stock liquidity is the performance of a company issuing the stock because the evidence obtained from the empirical accounting research such as that of Ball and Brown (1970) shows that there is a significant relationship between a company's performance and the stock price and its volume of transactions (Scott, 2008). Considering these issues, it could theoretically be claimed that there is a significant relationship between the performance and stock liquidity of a company. Also based on the above discussions, the question posed in this study is that whether or not a firm’s operation significantly affect the stock liquidity from an empirical viewpoint and within the Iranian capital market. The present study will attempt to answer this question and ultimately determine whether or not a company’s high performance will help to improve its stock liquidity. Obviously, neglecting the relationship between firm’s performance and stock liquidity will cause the investors to disregard the stock price liquidity and its influence from the firm’s performance in their investment decisions thereby make inappropriate decisions leading to economic losses. Accordingly, the scientific achievements of present study help investors to avoid mistakes and losses in making investment decisions and pay attention to the relationship between the performances of companies with their liquidity of stocks.  

In addition, the present study will attempt to explain the theoretical background and relevant research literature on the subject of this study. Then, the study hypothesis and method are described, and finally the experimental results are presented in two parts of descriptive and inferential statistics. The last part concludes and debates the research subject and findings, in which the necessary practical suggestions will be offered to the beneficiaries of this research.  

Theoretical background and literature review  
Stock liquidity  
Liquidity of an asset is defined as the rate of its ability to convert into cash. In other words, the greater the rate of conversion of an asset into cash, or if the asset can be converted into cash in a shorter time, it is referred to as a so-called high-liquidity asset (Shabahang, 2011). Liquidity is one of the factors determining the efficiency of securities, and the liquidity of a sheet of securities (e.g. ordinary shares) exceeds other securities when it can be converted into cash within the shortest time possible and without losses (Keynes, 1930). It should also be noted that the liquidity of securities such as a sheet of an ordinary share is judged based on such criteria as the rate of transaction, integrity, and the depth of transaction. The rate of transaction for an ordinary stock means the merchantability or rapid sale and purchase of the relevant stock. The integration of a
company's stock price refers to the affordability of the pertinent stock corresponding to a price in a given time. And the depth of the transaction signifies the merchantability of a given volume of a company’s equity without a significant impact on the stock price (Fernandez, 1999). According to the above descriptions, it can be noted that stock liquidity is one of the basic criteria in making decisions by investors, who select stocks that have greater liquidity when purchasing a company's stock.

**Firm's performance**
A firm's performance is considered among factors that affect making credit and investment decisions. This is because an optimal resource allocation in an investment process requires knowledge of the performance of firms and comparison of their operations with each other (Rahnamaye Roodposhti, 2009). Given the role of company's performance in making investment decisions, it would be necessary that investors to be able to use appropriate criteria in order to put this concept into action. A wide range of qualitative and quantitative criteria have so far been provided to evaluate the performances of firms. Also, some of the most important accounting measures namely net profit, earnings per share, return on assets, and return on equity can be used in evaluating the firms’ functions (Rahnamaye Roodposhti, 2009).

**The effect of company’s performance on stock liquidity**
Evidence from empirical accounting research shows that there are significant correlations between the performance and stock price of a company in the market (Shabahang, 2011) because the earnings release (as firm’s performance) causes the investors to buy and sell stocks accordingly, thence the volume of trading related to the firm releasing accounting information increases, which affects the liquidity of relevant firms as well (Scott, 2008). Taking into account the above issues, it can be expected that an empirical relationship is also established. However, to accept this claim empirically, experimental tests are needed on this issue.

The research literature
Table 1 shows the background research done on the subject of present study.

<table>
<thead>
<tr>
<th>Researcher</th>
<th>Year</th>
<th>Research title</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmad Pour and Rasaian</td>
<td>2006</td>
<td>The relationship between financial information and bid management</td>
<td>There is an inverse relationship between the bid and sales volume, number of shareholders, and the number of traders; there is a positive relationship between price differences and risk</td>
</tr>
<tr>
<td>Yahyazadeh Fard et al.</td>
<td>2010</td>
<td>A study on liquidity and stock returns in the Tehran Stock Exchange</td>
<td>The relationship between stock liquidity and stock returns in the Tehran Stock Exchange is both significant and positive</td>
</tr>
<tr>
<td>Kamyabi and Ranjbar</td>
<td>2014</td>
<td>The relationship between return, risk, and dividend policy with stock price fluctuations in the Tehran Stock Exchange</td>
<td>There is a significant positive relationship between the returns and dividend policy with stock price fluctuations, but the risk and stock price fluctuations are not significantly correlated.</td>
</tr>
<tr>
<td>Marshal</td>
<td>2006</td>
<td>A new benchmark for liquidity</td>
<td>The liquidity measure is an accurate weight measure of stock liquidity.</td>
</tr>
<tr>
<td>Chan and Faff</td>
<td>2003</td>
<td>The impact of liquidity of assets on the Australian capital market</td>
<td>Liquidity of assets in the Australian capital market is an important factor in investors' decisions</td>
</tr>
<tr>
<td>Baker and Stein</td>
<td>2003</td>
<td>A model to explain increased liquidity during the bid-ask spread</td>
<td>There is a high correlation between stock liquidity and stock returns</td>
</tr>
<tr>
<td>Doskar</td>
<td>2006</td>
<td>A model to explain the behavior of liquidity and volatility of stock prices</td>
<td>High volatilities are associated with a higher risk premium and when the return on assets is low, the market will not be liquidated</td>
</tr>
<tr>
<td>Amiyyhood</td>
<td>2003</td>
<td>The relationship between lack of stock liquidity with surplus returns predicted</td>
<td>A great deal of expected surplus returns and risk premium can be justified by the lack of stock liquidity</td>
</tr>
</tbody>
</table>
Hypothesis

According to the theoretical relationship between corporate performance and stock liquidity, the hypothesis of this study is formulated as follows:

H1: "The firm's performance has a direct significant effect on stock liquidity."

Methods

The current research is an applied one in objective because its results will be used by a wide range of users. This study is also descriptive-correlational in nature because it tries to examine the relationship between the two variables of the company's performance and stock liquidity. In the present study, data were collected through the documents related to the sample members including a series of their financial statements (main financial statements and explanatory notes). It should be noted that the information have been extracted through the website of Tehran stock exchange and also by the software Novin Rahavard. Data were analyzed with the software E-views, Version 7.

Statistical population and sample

In this study, the companies listed on the Tehran Stock Exchange comprise the study population and the samples were taken using systematic removal method. The criteria and method of sampling are shown in Table 2.

![Table 2. Sampling in this study](image)

Taking into account the limitations set forth in Table 2, a total of 111 companies have attained the required criteria and have been used as the samples in this study.

The model

A simple linear, multiple regression model was employed to test the study hypothesis:

\[ T = B_0 + B_1 \text{ROA}_t + B_2 \text{SIZE}_t + B_3 \text{MTB}_i, t + B_4 \text{LEV}_i, t + \xi \]

where:

- **T**: Stock liquidity (the dependent variable) measured through ranking the companies’ stock liquidities conducted by the Tehran Stock Exchange.
- **ROA**: Firm’s performance (the independent variable), which is equal to the rate of return on assets estimated from the annual net profit divided by total book value of year-end firm’s assets.
- **LEV**: The ratio of debt (the control variable) measured through dividing the sum of debt by total assets at the end of the year.
- **SIZE**: Firm’s size (the control variable) assessed from the natural logarithm of the sum of book value of assets at the end of the year.
- **MTB**: Growth of the firm (the control variable) obtained through dividing the market value of an ordinary stock by its year-end book value.

Findings

Descriptive statistics

![Table 3. Descriptive statistics for the variables are displayed](image)

According to Table 3, the mean (median) for all the variables are: \( \text{LEV}= 9472.44 \) (7028), \( \text{MTB}= -0.01 \) (-0.06), \( \text{ROA}= 0.21 \) (0.08), \( T= -0.01 \) (-0.05), and \( \text{SIZE}= 0.62 \) (0.63).
Inferential statistics

Measuring normality of the dependent variable

One of the assumptions necessary to use regression model for testing a hypothesis is normality of the model’s dependent variables. The results of normality for the dependent variable (stock liquidity) using Jarque-Bera’s test are seen in Table 4.

<table>
<thead>
<tr>
<th>Variable</th>
<th>T</th>
<th>Significance level</th>
<th>Compared to 0.05</th>
<th>Test result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jarque-Bera statistic</td>
<td>2.691</td>
<td>0.260395</td>
<td>Greater</td>
<td>Normal</td>
</tr>
</tbody>
</table>

As shown in Table 4, the significance level of Jarque-Bera statistic for the variable stock liquidity is more than 5%; thus, the normality of dependent variable is confirmed.

Tests to determine the model estimation method

Limmer and Hausman’s F tests was employed to determine the model estimation method. The results of these tests are as in Table 5.

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
<th>Compared to 5%</th>
<th>Model estimation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limer F</td>
<td>4.09</td>
<td></td>
<td>Panel</td>
</tr>
<tr>
<td>Significance level</td>
<td>0.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hausman X2</td>
<td>5.42</td>
<td>Greater</td>
<td>Random effect</td>
</tr>
<tr>
<td>Significance level</td>
<td>0.2462</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compared to 5%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

According to Table 4, the model must be estimated using panel - random effect to test the study hypothesis.

Estimation of model

Table 6 shows the results of model estimation based on panel-random effect.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient of the variable</th>
<th>Standard deviation</th>
<th>T Statistic</th>
<th>Significance</th>
<th>Compared to 0.05</th>
<th>Model result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-0.05</td>
<td>0.13</td>
<td>-0.41</td>
<td>0.6784</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>0.02</td>
<td>0.005</td>
<td>4.03</td>
<td>0.0001</td>
<td>Smaller</td>
<td>Affecting</td>
</tr>
<tr>
<td>SIZE</td>
<td>-0.00</td>
<td>0.18</td>
<td>-0.03</td>
<td>0.9700</td>
<td>Greater</td>
<td>Not affecting</td>
</tr>
<tr>
<td>MTB</td>
<td>0.04</td>
<td>0.04</td>
<td>0.80</td>
<td>0.4184</td>
<td>Greater</td>
<td>Not affecting</td>
</tr>
<tr>
<td>LEV</td>
<td>3.02</td>
<td>5.96</td>
<td>0.50</td>
<td>0.6131</td>
<td>Greater</td>
<td>Not affecting</td>
</tr>
<tr>
<td>Durbin-Watson statistic</td>
<td>1.52</td>
<td>The model errors are independent because the Durbin-Watson statistic is between 1.5 and 2.5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coefficient of model determination</td>
<td>0.08</td>
<td>Eight percent of changes in dependent variable is expressed by significant independent variables.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fisher’s statistic</td>
<td>4.617</td>
<td>The model significance is confirmed at this level.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significance level of the model</td>
<td>0.001</td>
<td>The model is significant (linear) because the significance level of Fisher statistic is less than 5%.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The coefficient of variable ROA is equal to 0.02 and the significance level of Student’s T statistic associated with this coefficient is 0.0001, which is smaller than 5%. The variable ROA, therefore, has a significant effect on the stock liquidity.
This means that the variable rate of return on assets (firm’s performance) has a significant effect on the stock liquidity, and because the variable rate of return on assets (0.02) in the model is positive, it has a direct relationship with the variable stock liquidity. Consequently, by increasing the rate of return on assets (performance improvement), the variable stock liquidity increases and vice versa. The study hypothesis is accepted with respect to these issues.

**Conclusion and discussion**

One of the factors influencing investment decisions in order to select the stocks is stock liquidity. This refers to the rapid conversion of stocks into cash, and a company with higher stock liquidity in comparison with other companies gains more demand and acceptability. The firm's operation is another influencing factor on investment decisions to be noted. This is because optimal resource allocation in an investment process involves evaluation of and attention to the operations of economic units. Empirical evidence from previous studies show that there is a significant relationship between corporate performance and the volume of company’s stock trading, and this process also affects the stock liquidity as it is a function of the volume of stock trading. Therefore, it can theoretically be claimed that the company's performance has a significant relationship with the stock liquidity. However, to accept such a claim empirically, a pertinent research question arises that whether or not firm’s performance has a significant effect on the stock liquidity empirically and in the Iranian capital market. In order to address this question, this study attempted to use a regression model for testing the effect of corporate performance (ROA) on stock liquidity from an empirical perspective. The results obtained from testing the hypothesis using the regression model show that the performances of companies in the Iranian capital market have direct and significant impacts on the companies’ stock liquidity. According to the findings, it can be concluded that companies with a higher performance level have a greater level of stock liquidity (convertible into liquidation). According to these results, it is recommended to all active investors in the Iranian capital market to make investment decisions and stock selection while considering the operations of different companies and finally choose those firms’ stocks to investment that are of higher performances because the empirical evidence gathered in this study indicate that the greater the performance of a firm (in comparison with other companies), the higher the corresponding stock liquidity of the company, which is considered to be a good place for investment.

**References**


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