The effect of Stock Liquidity on Corporate Cash Holdings in Tehran Stock Exchange

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Abstract

Stock illiquidity causes shareholders encounter some costs when they purchase or sell stocks and it results in investors demanding more return when purchasing compared to stocks with higher liquidity. Accordingly, the present research is going to investigate about the effect of stock liquidity on cash holding level. In this study 91 firms enlisted in Tehran Stock Exchange between the years 2010 and 2014 have been investigated. To test the hypotheses we have used linear and multiple pooled regression models. Research findings showed that the difference in price between supply and demand has had a meaningful effect on cash holding but zero return has had a negative and meaningful effect on cash holding. Also market depth, resiliency, and immediacy in the market did not have a meaningful effect on cash holding.

Keywords: stock liquidity, cash holding level.
Introduction
Liquidity is one of the most important factors in stock exchanges. It refers to the capability of stocks to be purchased and sold with the least cost and the minimum time spent. This criterion is considered as one of the factors noticed by shareholders when they are buying stocks. Liquidity refers to the least cost and lowest price in exchanges in financial markets and stock exchanges. Since lower liquidity (illiquidity) implicationally means a high risk in investment for the investors and following that the expected return rate by the shareholders increases based on it, the reduction of liquidity or increasing illiquidity make financing through issuing stocks relatively undesirable. In other words, stock illiquidity causes shareholders incur some costs when they purchase or sell stocks. Thus, the investors demand higher returns compared to stocks with higher liquidity when they are purchasing stocks. As studies have shown previously, the decreases of liquidity leads to increases in stock return by the investors. Now, we are going to deal with the relationship between stock liquidity and cash holding level.

Statement of the problem
According to parallelism theory firms determine the optimal cash holding by applying a balance between benefits and costs of cash holding. In fact firms adjust their optimal cash levels by determining the importance amount of costs and benefits resulting from cash holding. The important point in this theory is that there is an optimal level of cash for firms through which management uses an active approach to make decisions based on benefit costs' analysis compared to cash (Jani & et al, 2004, 126). Cash holding reduces the probability of financial crisis and is considered as safe reserves to encounter unexpected losses and it also makes it possible to follow optimal investment policies when the firm encounters financial constrains. Finally, it helps to reduce financial resources' collection costs or liquidation of current assets. According to this theory, to maximize the wealth of shareholders, management should adjust the residual of firm's cash in a way that final benefits resulted from cash holding becomes equal to its final costs (Opler & et al, 2002, 76). One of the factors affecting cash holding level is firm size. Accordingly, big firms that have bank credits can borrow with a better interest rate and are able to achieve cashes easily when required. Additionally, big firms can always sell a part of their unnecessary assets to gain cashes (Aydin & Neslihan, 2004, 27). Although cash holding level is known as an effective factor in capital cost and firm value, the effect of stock liquidity on holding level has been noticed by the researchers.

Basically liquidity is a complex concept and has different dimensions and is considered as one of the functions of stock exchanges. Liquidity means the ability to purchase or sell an asset with a low cost and without considerable effects on the price of that asset. Accordingly illiquidity of a financial asset is considered as its risk that leads to increase exchange costs of that asset (Breen & et al, 2000, 65). The investors of a firm's stocks expect return both because of the investment risk and exchange costs related to stock purchase or selling. Therefore, if stock liquidity of a firm is low, the investors will demand a higher return and thus capital cost will increase. Obviously, in such a situation the firm is obliged to pay more profits for the investors to keep the capital in stock market and this leads to reduce cash holding level in the firm (Mortal & Lipson, 2009, 45). On the whole, liquidity refers to bonds with the least cost and lowest prices in financial markets. Since lower liquidity (illiquidity) implicationally means a high risk in investment for the investors and following that the expected return rate by the shareholders increases based
on it, the reduction of liquidity or increasing illiquidity make financing through issuing stocks relatively undesirable (Bagheri-e-Mehmandousti, Babak, 2007). In other words, stock illiquidity causes shareholders incur some costs when they purchase or sell stocks. Thus, the investors demand higher returns compared to stocks with higher liquidity when they are purchasing stocks. Finally, regarding the effect of liquidity on expected stock return, capital cost, and firm value the findings showed that there has been a meaningful relationship between liquidity and cash holding level. These results can be considered important for managers, investors, analysts, and researchers in capital market in Iran. Thus, the goal of the present research is to investigate the effect of stock liquidity on cash holding level in firms enlisted in Tehran Stock Exchange.

Research significance
The significance of the present research is described below:
The incentive to do the present research resulted from academic researches done recently on cash flow holding levels because regarding that cashes are among important and critical resources in any economic unit and making a balance between current cashes and cash demands is one of the most important factors in economic safety of any economic unit and the permanence of its activities, cash flows play a critical role in many of financial decisions, validating patterns of bonds, …. On the other hand, stock liquidity is one of the topical issues in financial investigations that are highly important regarding the investors' outlooks. Also the investors permanently try to purchase the stocks of those firms that have high stock liquidity. The researches show that if stock liquidity is low in a firm, the investors would expect higher returns and therefore capital cost will increase. Obviously, in such a situation the firm is obliged to pay more profits for the investors to keep the capital in stock market and this leads to reduce cash holding level in the firm.

Research hypotheses
The hypotheses in this research are devised in the form of a major hypothesis and four minor hypotheses as follows:
**Major hypothesis 1** - stock liquidity affects cash holding level.
**Minor hypothesis 2** - tightness affects cash holding level.
**Minor hypothesis 3** - market depth affects cash holding level.
**Minor hypothesis 4** - market immediacy affects cash holding level.
**Minor hypothesis 5** - resiliency affects cash holding level.

Foreign literature review
Chang & et al (2013) carried out a research among 255 firms during the time period between 2000 and 2010 and studies the relationship between earning opaqueness, cash flows, and the risk of stock price reduction. They showed that earning opaqueness and operating cash flows sensitivity lead to lack of the disclosure of bad news and increase the risk of stock price reduction.
Mark Lipson & Sandra Mortal (2009) identified the relationship between liquidity in stock market and capital structure in firms. The research results showed that there has been a reverse relationship between capital structure (the ratios of liabilities and value of liabilities to current value of assets) and liquidity. Also this study showed that firms with high liquidity tend to finance through stocks rather than financing through liabilities.
Bhattacharya & et al (2008) investigated about the relationship between earning quality and stock liquidity in New York Stock exchange and Nazdak bourse during the time period between 1998 and 2005. Their research results showed that low quality of earning leads to increase information asymmetry and thus stock liquidity decreases (Bhattacharya & et al, 2009).

Lonstaff (2005) showed that lots of assets have low liquidity features and they can not be exchanged immediately. He has investigated about the role of liquidity factor in pricing assets. In stock market some assets have high liquidity but others are exchanged within a relatively longer periods. Illiquidity has a tremendous effect in making decisions for optimal portfolios. He announced that an asset with high liquidity can be valued 25% higher than an asset with illiquidity.

Local literature review
Yaghoubnejhad & Zabihi (2011) investigated about the relationship between data disclosure quality and stock liquidity in Tehran Stock Exchange. The main hypothesis was that disclosure quality and stock liquidity have had a positive relationship. But the research results showed that there has not been a meaningful relationship between disclosure quality and stock liquidity.

Izadinia & Rasaeian (2010) found out in his research on ownership dispersion and stock liquidity that there has not been a meaningful relationship between stock liquidity whose criterion is the difference between purchase and selling price of the stocks and ownership dispersion whose criterion is the percentage of block ownership of stocks.

Rahmani & et al (2010) studied the relationship between institutional ownership and stock liquidity in Iran. The results showed that there has been a positive and meaningful relationship between institutional ownership and stock liquidity and institutional ownership concentration leads to reduce stock liquidity in firms. These relationships have been observed regarding exchange criteria such as the volume of exchanges, the percentage of flowing stocks, Amihod’ criterion and regarding data criteria such as the price difference between supply and demand of stocks.

Research method
Accounting researches generally fall within positive research group. The present research is categorized within the positive approaches' class. This study is correlation type regarding the method and is applied regarding the goal. The present research is also considered as descriptive accounting researches. Additionally, since historical data were used in testing the hypotheses, it can be categorized within quasi-experimental researches. Also the present study is experience-based, it is analogical regarding the reasoning and it is categorized within field-library studies using historical data in the form of post incidental (using past data).

Sampling method
In the present study and to identify the statistical sample, we did not use a certain equation to estimate sample volume and sampling but we have used a deletion method whenever required. Thus, the conditions to be met were posed as follows:

1- To observe comparability firms’ fiscal year should end at the end of Esfand (20th of March).
2- During research period, firms should not have stops and should not have changed their fiscal years.
3- All the information needed about the firms should be accessible.
4- Firms should not be from among banks and financial entities (investment firms, financial intermediaries, holding companies, and leasing).

**Research variable and their operational definitions**
Regarding that in this research we have investigated the effect of stock liquidity (tightness, depth, resilience, and market independence) on holding level of cash, the indexes for stock liquidity are considered as independent variables, the cash holding was considered as the dependent variable. Also in this study and based on studies carried out before in Iran, the variables of firm size, market value to book value of stocks, and liabilities' maturity were considered as control variables.

**First hypothesis model:**
\[ CH_{i,t} = \beta_0 + \beta_1 \text{zero return}_{i,t} + \beta_2 \text{MB}_{i,t} + \beta_3 \text{SIZE}_{i,t} + \beta_4 \text{LM}_{i,t} + \epsilon \]

**Second hypothesis model:**
\[ CH_{i,t} = \beta_0 + \beta_1 \text{Depth}_{i,t} + \beta_2 \text{MB}_{i,t} + \beta_3 \text{SIZE}_{i,t} + \beta_4 \text{LM}_{i,t} + \epsilon \]

**Third hypothesis model:**
\[ CH_{i,t} = \beta_0 + \beta_1 \text{Immediacy}_{i,t} + \beta_2 \text{MB}_{i,t} + \beta_3 \text{SIZE}_{i,t} + \beta_4 \text{LM}_{i,t} + \epsilon \]

**Fourth hypothesis model:**
\[ CH_{i,t} = \beta_0 + \beta_1 \text{Resiliency}_{i,t} + \beta_2 \text{MB}_{i,t} + \beta_3 \text{SIZE}_{i,t} + \beta_4 \text{LM}_{i,t} + \epsilon \]

**Dependent variable**
In this research cash holding level was considered as the dependent variable and the following ratio has been used to calculate it (Ibrahimi, 2013):
Cash holding level = cash and bank deposits / total assets

**Independent variables**
In this research the variables of tightness, depth, resilience, and immediacy were considered as independent variables and the calculation method for each of them has been explained below (Fenderski, 2014):

**Market tightness**
Market tightness refers to the difference between purchase and selling prices of the stocks where interchange costs are not involved. The lower amount of the difference between these two prices shows that the stock is closer to its intrinsic price and there is less exchange costs
and thus liquidity is higher. To measure this dimension of liquidity we use zero return and the calculation of these two variables is as follows:

**Zero return**
To calculate this variable we use the following model:

\[ \text{Zero}_{i,t} = \frac{\text{zeroreturn}_{i,t}}{\text{tradingday}_{i,t}} \]

Where,

\( \text{Zero}_{i,t} \) = the number of days through which share \( i \) has had zero return in year \( t \)

\( \text{Trading day}_{i,t} \) = the number of days through which share \( i \) has been traded during the year \( t \)

**Depth**
The higher amount of a share being traded with the same price shows the depth of the market and high liquidity of the share. Market depth has been calculated by using Amihad & Mandelson's illiquidity ratio (1986) as follows:

\[ \text{illiquid}_{i,t} = \left( \frac{1}{D_{i,t}} \sum_{d=1}^{D_{i,t}} \left| R_{i;d;t} \right| \right) / V_{i;v:d;\ldots;t} \]

Where,

\( \text{Illiquid}_{i,t} \) = illiquidity

\( D_{i,t} \) = total days of exchanges of share \( i \) in year \( t \)

\( R_{i;d;t} \) = absolute amount of the return of share \( i \) in year \( t \)

\( V_{i;v:d;\ldots;t} \) = value of exchanges based on million rials for share \( i \) in year \( t \)

In other words, the share whose illiquidity ratio is high would have a great change in return to a small volume of exchanges. This ratio is gained by dividing absolute amount into exchanges with a certain time period and the higher amount of it shows more illiquidity. The less distance between supply and demand figure (market latitude) and lower amounts of exchanges in the market (depth) show the liquidity of the share. Of course this can show that exchange price of the share is closer to its intrinsic value.

**Immediacy**
Immediacy refers to the time of an exchange with a certain volume and certain cost in a way that the lower time and higher speed of exchanges in time show more liquidity of the share. To measure this aspect of liquidity we divide the number of shares exchanged into the number of shares issued as follows:

\[ \text{turnover}_{i,t} = \frac{\text{VOL}_{i,t}}{\text{Share}_{i,t}} \]

\( \text{VOL}_{i,t} \) = volume of exchanges based on the number of shares traded for share \( i \) in year \( t \)

\( \text{Share}_{i,t} \) = the number of shares issued by a firm

**Resiliency**
Resiliency refers to the resilience of share's trading price with its intrinsic price within the possible shortest time. This feature mainly is used when unaware shareholders do uncommon exchanges and this result in creating distance between the intrinsic price and the exchange price of the share. Of course, this shows that share market is balanced and consistent along with being competitive where the price is determined through supply and demand forces and
if prices are changed, they change to become balanced and the following formula is used to calculate them:

\[ R_{i,t+1} = \text{surplus return on weight index of the market for share } i \text{ in year (return of firm I in year } t \text{ minus market return in year } t+1) \]

\[ r_{i,t+1}^e = r_{i,t} - r_{m,t} \]

\[ \lambda_0 = \text{fixed coefficient} \]

\[ \lambda_1 = \text{the coefficient of share return variable that is calculated through regression} \]

\[ r_i,t = \text{share } i \text{ return in year } t \]

\[ \lambda_2 = \text{reversible return coefficient of the share that is calculated through regression} \]

\[ \text{sign} = \text{the sign of share's surplus return compared to market weight return index in year } t \]

\[ \text{vol}_{i,t} = \text{the volume of exchanges based on million rials for share } i \text{ in year } t \]

**Control variables**

In this research and regarding few researches carried out in the field, the following control variables were taken into consideration:

**Market to book value ratio:** in this research and to gain the ratio of market to book value we have divided the day price of the share at the end of a fiscal year into book value of each share.

**Firm size:** in this research firm size has been calculated by using rials amount of assets.

**Liability maturity:** in this research and to calculate this variable we have used the ratio of short-term liability to total liability.

**Data analysis**

Table 1 below shows the results of the descriptive statistics of the research variables for 455 observations as below:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Std. Dev.</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH</td>
<td>0.058</td>
<td>0.040</td>
<td>0.500</td>
<td>0.000</td>
<td>0.063</td>
<td>2.725</td>
<td>13.011</td>
</tr>
<tr>
<td>ZERO_RET</td>
<td>0.124</td>
<td>0.098</td>
<td>0.863</td>
<td>0.000</td>
<td>0.114</td>
<td>2.108</td>
<td>10.504</td>
</tr>
<tr>
<td>DEPTH</td>
<td>0.000</td>
<td>2.620</td>
<td>0.029</td>
<td>1.020</td>
<td>0.001</td>
<td>12.197</td>
<td>166.740</td>
</tr>
<tr>
<td>IMMEDIACY</td>
<td>0.173</td>
<td>0.085</td>
<td>2.530</td>
<td>4.850</td>
<td>0.250</td>
<td>3.921</td>
<td>26.774</td>
</tr>
<tr>
<td>RESILIENCY</td>
<td>-1.080</td>
<td>-4.356</td>
<td>58.394</td>
<td>-37.343</td>
<td>22.095</td>
<td>0.164</td>
<td>1.994</td>
</tr>
<tr>
<td>MB</td>
<td>2.008</td>
<td>1.693</td>
<td>13.213</td>
<td>-11.569</td>
<td>1.725</td>
<td>0.318</td>
<td>17.800</td>
</tr>
<tr>
<td>SIZE</td>
<td>13.771</td>
<td>13.577</td>
<td>18.549</td>
<td>10.086</td>
<td>1.541</td>
<td>0.829</td>
<td>3.836</td>
</tr>
<tr>
<td>LM</td>
<td>0.865</td>
<td>0.920</td>
<td>1.000</td>
<td>0.180</td>
<td>0.144</td>
<td>-1.846</td>
<td>6.336</td>
</tr>
</tbody>
</table>

**Table 2:** Results of studying the normality of the distribution of dependent research variable
### KS Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Maximum</th>
<th>Minimum</th>
<th>k-z</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH</td>
<td>0.058</td>
<td>0.063</td>
<td>0.500</td>
<td>0.000</td>
<td>1.186</td>
</tr>
<tr>
<td>Sig</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.125</td>
</tr>
</tbody>
</table>

Regarding table 2, after testing normality, the meaningfulness level of Z statistics of KS test for the dependent variable has increased into higher than 0.05. Therefore, hypothesis $H_1$ claiming the normality of the distribution of the data is approved and it shows that the dependent research variable has had a normal distribution.

### Table 3: The test of unitary root by using adjusted Dikki-Fuller test

<table>
<thead>
<tr>
<th>Variable</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH</td>
<td>-20.514</td>
<td>0.000</td>
</tr>
<tr>
<td>ZERO_RET</td>
<td>-18.409</td>
<td>0.000</td>
</tr>
<tr>
<td>DEPTH</td>
<td>-21.607</td>
<td>0.000</td>
</tr>
<tr>
<td>IMMEDIACY</td>
<td>-21.082</td>
<td>0.000</td>
</tr>
<tr>
<td>RESILIENCY</td>
<td>-1.857</td>
<td>0.000</td>
</tr>
<tr>
<td>MB</td>
<td>-18.775</td>
<td>0.000</td>
</tr>
<tr>
<td>SIZE</td>
<td>-17.989</td>
<td>0.000</td>
</tr>
<tr>
<td>LM</td>
<td>-11.041</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Regarding the results presented in table 3 all research variables have had consistency in assurance level of 95%. In the next stage, the following tests were used to test research hypotheses:

**Results of testing first minor hypothesis**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-Statistic</th>
<th>Prob.</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZERO_RET</td>
<td>-0.055</td>
<td>-2.225</td>
<td>0.026</td>
<td>1.645</td>
</tr>
<tr>
<td>MB</td>
<td>0.000</td>
<td>0.417</td>
<td>0.676</td>
<td>1.064</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.013</td>
<td>4.160</td>
<td>0.000</td>
<td>1.851</td>
</tr>
<tr>
<td>LM</td>
<td>0.074</td>
<td>5.354</td>
<td>0.00</td>
<td>1.090</td>
</tr>
<tr>
<td>C</td>
<td>-0.168</td>
<td>-4.321</td>
<td>0.000</td>
<td>-</td>
</tr>
</tbody>
</table>

R Squar: 0.152
Adjusted R Square: 0.143
Durbin-Watson: 2.097

| F          | 16.198      | Prob. 0.000 |
Regarding the results of testing the first minor hypothesis that have been represented in table (4), the meaningfulness level of F-limer statistic (0.939) has been higher than the acceptable error level (%5), thus pooled data method has had a priority over panel data method. Also the meaningfulness level of F-white statistic has been 0.000 and it shows that the regression has had variance incongruence. Therefore, after removing this problem by using adjusted least squares the regression is adjusted and finally, Godfrey statistic was tested and since the meaningfulness of Godfrey statistic has been higher than acceptable error level (%5), the regression did not have serial self-correlation problem. Then, regarding that F statistic (0.000) has had a meaningfulness level of below 5 percent; the regression has had identification power. Also regarding that the variables of tightness and zero return (market tightness indexes) have had a meaningfulness level of higher than %5 and below %5, respectively, zero return has had a negative (reversed) and meaningful effect on cash holding level. Therefore, among control variables, firm size and liability maturity indexes have had positive and meaningful effects on cash holding level. Durbin-Watson statistic has also been between 1.5 and 2.5. Thus, we can conclude that there has not been self-correlation problem among the variables. Additionally, the amount of identification coefficient shows that changes in independent and control variables could represent %15.2 of changes in the dependent variable. Finally, by testing the co-linearity among research variables, the amount of VIF (variance inflation factor) statistic for all variables has been less than 5 and this showed that there has not been a strong co-linearity problem among research variables.

Results of testing second minor hypothesis

Table 5: Results of testing second minor hypothesis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-Statistic</th>
<th>Prob.</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEPTH</td>
<td>-0.007</td>
<td>-0.012</td>
<td>0.989</td>
<td>1.011</td>
</tr>
<tr>
<td>MB</td>
<td>0.001</td>
<td>0.772</td>
<td>0.440</td>
<td>0.080</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.011</td>
<td>4.213</td>
<td>0.000</td>
<td>1.092</td>
</tr>
<tr>
<td>LM</td>
<td>0.082</td>
<td>5.847</td>
<td>0.000</td>
<td>1.077</td>
</tr>
<tr>
<td>C</td>
<td>-0.179</td>
<td>-4.280</td>
<td>0.000</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>R Squar</td>
<td>0.143</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Adjusted R Square</td>
<td>0.135</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Durbin-Watson</td>
<td>2.108</td>
</tr>
<tr>
<td>F</td>
<td>18.848</td>
<td></td>
<td>Prob.</td>
<td>0.000</td>
</tr>
<tr>
<td>Godfrey</td>
<td>1.373</td>
<td></td>
<td>Prob.</td>
<td>0.254</td>
</tr>
</tbody>
</table>
Regarding the results of testing the second minor hypothesis that have been represented in table (5), the variable of market depth (independent variable) has had a meaningfulness level of higher than %5 and therefore market depth did not have a meaningful effect on cash holding level. Also from among control variables, firm size and liability maturity indexes have had positive and meaningful effects on cash holding level. Durbin-Watson statistic has also been between 1.5 and 2.5. Thus, we can conclude that there has not been self-correlation problem among the variables. Additionally, the amount of identification coefficient shows that changes in independent and control variables could represent %14.3 of changes in the dependent variable. Finally, by testing the co-linearity among research variables, the amount of VIF (variance inflation factor) statistic for all variables has been less than 5 and this showed that there has not been a strong co-linearity problem among research variables.

Results of testing third minor hypothesis

Table 6: Results of testing third minor hypothesis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-Statistic</th>
<th>Prob.</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediacy</td>
<td>-0.003</td>
<td>-0.375</td>
<td>0.707</td>
<td>1.033</td>
</tr>
<tr>
<td>MB</td>
<td>0.001</td>
<td>0.774</td>
<td>0.439</td>
<td>1.108</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.011</td>
<td>4.229</td>
<td>0.000</td>
<td>1.087</td>
</tr>
<tr>
<td>LM</td>
<td>0.081</td>
<td>5.823</td>
<td>0.000</td>
<td>1.085</td>
</tr>
<tr>
<td>C</td>
<td>-0.178</td>
<td>-4.291</td>
<td>0.000</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>R Squar</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.143</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R Square</td>
<td>0.136</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>2.108</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>18.876</td>
<td>Prob. 0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Godfrey</td>
<td>1.416</td>
<td>Prob. 0.243</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-white</td>
<td>10.952</td>
<td>Prob. 0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-limer</td>
<td>0.519</td>
<td>Prob. 0.721</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Regarding the results of testing the third minor hypothesis that have been represented in table (6), the variable of market immediacy (independent variable) has had a meaningfulness level of higher than %5 and therefore market immediacy did not have a meaningful effect on cash holding level. Also from among control variables, firm size and liability maturity indexes have had positive and meaningful effects on cash holding level. Durbin-Watson statistic has also been between 1.5 and 2.5. Thus, we can conclude that there has not been self-correlation problem among the variables.
problem among the variables. Additionally, the amount of identification coefficient shows that changes in independent and control variables could represent %14.3 of changes in the dependent variable. Finally, by testing the co-linearity among research variables, the amount of VIF (variance inflation factor) statistic for all variables has been less than 5 and this showed that there has not been a strong co-linearity problem among research variables.

Results of testing fourth minor hypothesis

Table 7: Results of testing fourth minor hypothesis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-Statistic</th>
<th>Prob.</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resiliency</td>
<td>-4.660</td>
<td>-0.418</td>
<td>0.675</td>
<td>1.084</td>
</tr>
<tr>
<td>MB</td>
<td>0.001</td>
<td>0.773</td>
<td>0.439</td>
<td>1.127</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.011</td>
<td>4.210</td>
<td>0.000</td>
<td>1.144</td>
</tr>
<tr>
<td>LM</td>
<td>0.081</td>
<td>5.811</td>
<td>0.000</td>
<td>1.087</td>
</tr>
<tr>
<td>C</td>
<td>-0.179</td>
<td>-4.261</td>
<td>0.000</td>
<td>-</td>
</tr>
</tbody>
</table>

R Squar | 0.143 |
Adjusted R Square | 0.136 |
Durbin-Watson | 2.111 |

F | 18.888 | Prob. 0.000 |
Godfrey | 1.463 | Prob. 0.232 |
F-white | 8.994 | Prob. 0.000 |
F-limer | 1.707 | Prob. 0.147 |

Regarding the results of testing the fourth minor hypothesis that have been represented in table (7), the variable of resiliency (independent variable) has had a meaningfulness level of higher than %5 and therefore resiliency did not have a meaningful effect on cash holding level. Also from among control variables, firm size and liability maturity indexes have had positive and meaningful effects on cash holding level. Durbin-Watson statistic has also been between 1.5 and 2.5. Thus, we can conclude that there has not been self-correlation problem among the variables. Additionally, the amount of identification coefficient shows that changes in independent and control variables could represent %14.3 of changes in the dependent variable. Finally, by testing the co-linearity among research variables, the amount of VIF (variance inflation factor) statistic for all variables has been less than 5 and this showed that there has not been a strong co-linearity problem among research variables.

Discussion and conclusion

Stock illiquidity leads shareholders to incur costs when they purchase or sell shares and this causes investors demand higher returns when they purchase stocks compared to the stocks with high liquidity. Finally, regarding the effect of stock liquidity on expected return, capital
cost, and firm value the goal of the present research is to investigate about the effect of stock liquidity on cash holding level in firms enlisted in Tehran Stock Exchange. In addition to the theoretical foundations mentioned above, the research findings showed that tightness did not have a meaningful effect on cash holding level. Zero return has had a negative and meaningful effect on cash holding level. Also depth, resilience, and immediacy did not have a meaningful effect on cash holding level. Regarding the results of the present research it can be stated that since increasing zero return results in reducing return rate expected by the shareholders, it is expected that firms whose stocks have higher zero returns will have shareholders that demand higher stock earnings. Thus, this can obligate the manager to pay dividends and block the surplus money in the economic unit. Also regarding the fact that zero return results in reducing liquidity of the stocks, implicitly capital cost will increase and it would be more desirable for firms to finance through liabilities when they encounter low liquidity. Meanwhile, it is suggested to consider advantages resulting from liabilities such as taxation advantages in response to increasing costs such as agency costs and liquidity costs resulted from utilizing liabilities concurrently. Regarding the rejection of the results of the hypotheses, it can be stated that probably these hypotheses were not approved in Iran due to the lack of efficiency in capital market.

**Suggestions resulted from the research**

Regarding the results of the present research, it can be suggested to the investors to consider the effects of zero returns on cash holding level of firms when they are making investment decisions because probably by over increase of this item the flexibility of the firm will be violated (due to the reduction of cash holding level). Since managers tend to supply firm owners’ trust, they should consider this point that increasing zero return has a reverse effect on cash holding level and thus the managers should try to reduce zero returns in their economic units.

It can be suggested to Stock Exchange Organization to devise rules and regulations regarding the negative effect of zero return on cash holding level to help firms do exploit lower zero returns and higher stock liquidity to reduce their capital costs.
References