



Stock liquidity and financial indicators of companies

Farshid Efati Baran

PhD student of Economics, Firuzkooh Branch, Islamic Azad University, Firoozkooh, Iran.

farshidefati@yahoo.com

Yazdan Naghdi

Assistant Professor, Tehran Gharb Branch, Islamic Azad University, Tehran, Iran.

(Corresponding Author)

y_naghdi@yahoo.com

Mahmood Mahmoodzadeh

Associate Professor Firuzkooh Branch, Islamic Azad University, Firoozkooh, Iran.

mahmod.ma@yahoo.com

Maryam Lashkarizadeh

Assistant Professor, Tehran Gharb Branch, Islamic Azad University, Tehran, Iran.

lashkarizadehm@yahoo.com

Submit: 27/06/2023 Accept: 29/07/2023

ABSTRACT

The purpose of this study is to investigate the effect of changes in the liquidity index of the shares of active companies in the Tehran Stock Exchange on the key financial indicators of those companies to explain the temporary exposure to liquidity risk. The liquidity of a stock sheet means the possibility of selling it quickly. It can be said that the faster and cheaper a share can be sold, the more liquid it is. Changes in the liquidity index of companies' shares can affect the financial performance of companies. In this study, the impact of stock liquidity on the financial indicators of companies active in the Tehran Stock Exchange during the years 1387-1400 was investigated in the form of a panel data model. The results of the estimation of the research models showed that the liquidity criterion has a significant effect on the amount of short-term debts of the companies at the rate of -1.15. Also, the liquidity criterion has a positive and significant effect on the amount of liquid assets of companies by 1.30. This measure of liquidity has a positive and significant effect on the amount of companies' assets by 1.53. The results of the research show that increasing the liquidity index of companies' shares can affect the short-term financial indicators of companies, including short-term liabilities and liquid assets.

Keywords: Liquidity, Stock Exchange, Financial indicators.

1. Introduction

One of the topics that has drawn the attention of many researchers in the field of financial economics in recent years is the issue of stock price efficiency (share price awareness). The efficiency of the stock price refers to the extent to which the market price of a stock is informative and contains information about the real and underlying economic conditions of that stock. Prices are formed through the market mechanism and the collection of information by market participants about the transaction value of assets. Especially in the stock market, investors trade with different combinations of information and try to make profit through their information. As a result of the transactions between shareholders, the stock price gathers these different combinations of information and reflects investors' expectations of the company's stock value (Bond et al., 2012).

The review of research conducted in economic and financial fields shows that the liquidity of stocks is a factor that can increase the number of informed investors through channels and improve the quantity and quality of information that can be included in prices. Therefore, the increase in stock liquidity is expected to bring the stock price closer to its real value, or in other words, make the stock price more efficient. Stock liquidity means that the investor can trade the stock quickly and with the lowest cost and the least impact on the stock price. The lower the liquidity of a share, the less attractive it will be to investors, unless it brings more returns to its owner (Keil and Nicholson, 2003).

According to financial and economic literature, improvement in stock liquidity can increase stock price efficiency in three ways:

1. Improvement in stock liquidity increases the final value of information and therefore stimulates stock market participants to obtain confidential information about the intrinsic value of companies. The most direct effect is the improvement of stock liquidity, the reduction in exchange cost and therefore the increase in profit from the exchange based on confidential information. Apart from this improvement in stock liquidity, it lowers the threshold of information value based on which investors can trade profitably (Fang, 2012).

2. Liquidity of shares strengthens the formation of major shareholders. Gerken (2011), showed that there is a positive relationship between stock liquidity and

the formation of major shareholders. Major shareholders generally have privileged information. Since they are able to sell a large amount of stock as soon as they receive negative information, they have the necessary incentive to be aware of the information. In other words, major shareholders have more access to management and a higher ability to obtain information and perform better quality fundamental analysis because of the resources they have.

3. Stock liquidity leads to risk-based arbitrage. Risk-based arbitrage means long-term holding of stocks that are undervalued and short-term holding of stocks that are overvalued. Arbitrage traders are generally well informed. Karpoff and Lou (2010), for example, find that arbitrage traders are able to detect companies that manipulate their financial statements. Therefore, the arbitrage exchange helps to align the price and intrinsic value of the stock and thus improves the efficiency of the stock price. Liquidity reduces transaction costs and enables investors to change their ownership status at prices that do not fully reflect confidential information. This increases the benefits of arbitrage trading.

According to what was said, the increase in the stock liquidity criterion can lead to an increase in the efficiency of the stock and an increase in the efficiency, and as a result, an increase in the stock price. This increase in stock price can affect the future financial performance of the company.

One of the main duties of financial managers is to decide on the appropriate combination of sources of financing for the company, or in other words, to decide on the capital structure. Based on the theoretical foundations proposed in the field of financial management, the concept of capital structure is to reach a suitable and desirable combination of equity and total liabilities; In such a way that the value of the company's shares can be maximized and, on the other hand, the cost of financing can be reduced to the minimum possible (Kohher, 2007). Due to the importance of capital and asset structure, several studies have been conducted on the effects of various variables on capital and asset structure, which has resulted in the presentation of theories about the determination and combination of the optimal capital and asset structure, among which the hierarchical theory can be provided. Finance, the theory of free cash flows, the theory of representation, the theory of

determining the time position of the market (Bokpin, 2009). In general, in all the theories presented about determining the capital structure, the main focus is on answering questions such as which state has tax savings for the company? What capital structure is cheaper and affordable for the company? or restrictions related to the capital structure that the company is required to comply with; What will be and it deals with issues like this (Myers, 1983). It should be mentioned that most of the theories proposed about the capital and asset structure are also based on paying attention to the internal structure of the companies and the effect of internal factors such as the way of management, the policies related to buying and selling and the variables under the control of the company and by assuming constant factors and Economic variables have been studied (Bookpin, 2009).

However, in the success process of a company, extra-organizational factors, such as social, cultural, political and economic conditions, can be widely and significantly influential. Therefore, policies made by governments regarding major economic factors can have an effect on capital structure - which is one of the main decisions of financial managers in a company. Factors such as inflation, exchange rate, interest rate, as well as capital market components for listed companies, such as yield, stock price, and liquidity, can affect the company's capital and asset structure. Therefore, in the last two decades, a lot of research has been done on how the liquidity of a company's shares affects the company's future performance. Researchers have doubts about the effect of liquidity on the performance of the company and present different and conflicting theories. Some theories indicate the positive effect of liquidity on the company's performance, and others on the negative effect of liquidity on the company's performance. But what is clear and has been proven in the majority of previous studies and researches is the effect of changes in the liquidity of stocks on the company's financial performance, and in this research, this relationship is also investigated in Iran and the companies accepted in the Tehran Stock Exchange.

The main hypothesis of the research is that changes in liquidity criteria in the stock market have a significant effect on the key financial indicators of listed companies.

The structure of the article is such that after the introduction, in the second part the theoretical foundations and background of the research, in the third part the research methodology along with the design and testing of the experimental model will be stated, in the fourth part the research findings and in the fifth part the conclusions and suggestions will be stated.

Literature Review

James Tobin, one of the most prominent economists in the world, emphasized the assumption that the company's assets should be able to replace the company's market value. Thus, if the market value of the company is more than its assets, this company has been able to use its assets in an optimal way. In this case, the stock value is more than its current value. If the market value of the company is lower than the value of the company's assets, the company could not use its assets optimally. Market value refers to the total dollar value (or Riyal) of a company's shares in the stock market and is calculated by multiplying the total number of shares of a company by the current price of that share that is being traded in the market.

Using market capitalization to represent a company's size is important because company size is a fundamental determinant of various characteristics that investors are interested in; including investment risk. According to the researches of scientists such as Diband and Thaler, financial markets are affected by the behavior of investors through financial-behavioral means; If the financial-behavioral views are correct, it is accepted that investors overreact or underreact to price changes and news; They extrapolate past trends to the future; They do not pay attention to the fundamentals of stocks, they focus on specific stocks and seasonal price cycles. As a result, these market factors affect the decisions of investors in the stock market (Diband, 1995). Effective market factors that affect investors' decisions include: price changes, market information, past stock trends, customer preferences, overreaction to price changes, liquidity, and the fundamental principles of stocks (Waweru et al., 2008). Waweru and his colleagues showed that changes in stock prices affect investment behavior at some level. This means that investors prefer to buy stocks that have experienced higher price changes over the past two years than to sell them. In such an environment, the change in the stock price can be

considered as an important and effective event in the market. Many investors tend to focus on common and well-known stocks in the market. Wen (2010) states that investors usually choose stocks that attract their attention. On the other hand, the selection of stocks also depends on the preferences of investors.

According to the efficient market theory, one of the characteristics of efficient and ideal markets is the absence of costs of results and, as a result, high liquidity. Accounting is one of the sources of information that can be used to reduce market information inefficiency by providing relevant information and thereby affect the liquidity of the company's shares. Liquidity shares can be considered as a feature for market efficiency, especially in terms of information, and it can be used to form a review of factors affecting the provision of useful information. We know that information is measured by market reaction. In general, we see two types of reactions to information in the markets. The first reaction is the price effect on the stock market, which most economic research studies this information. But the market also reacts to information in the form of volume effect. This reaction is observed as an increase or decrease in the demand or the amount of buying and selling of shares, which may or may not be accompanied by a change in the share price. This effect appears in the liquidity indicators and has been paid less attention and use in accounting. Liquidity plays an important role in the price discovery process and market characteristics are particularly informationally efficient (Amihud et al., 2005). In addition, in different aspects, in terms of practicality and attention to the realities of buying and selling phenomena and many other problems, attention to criticism is to solve this problem. An increase in liquidity can make financial distribution as much as possible by reducing portfolio management costs and motivating them in their investment decisions. Studies show that costs in American markets have been economically significant (Lesmon et al., 1999).

Liquidity is especially important after the global crisis and the collapse of financial markets, and it is also important for Iran's capital market. The phenomenon of buying and selling queues indicates the existence of liquidity problems in the Iranian market.

With the increase in liquidity, the cost will decrease significantly. Liquidity also plays an

important role in the price discovery process. A large number of studies have focused on expected returns. Considering the factors affecting it, it can help in its improvement.

According to the results of Waweru's research and the importance of the liquidity index in investing in a share, it can be said that the calculation of this index is very important. Among the famous models for calculating the liquidity index are the Amihud and Mendelson indices, which are considered one-dimensional criteria according to the method of calculation. One-dimensional criteria are among the weakest methods in calculating liquidity. But multidimensional criteria have the ability to calculate liquidity more accurately. One of these multidimensional measures is the use of transaction value and its impact on the additional returns created in the stock exchange. The higher the liquidity of a market, the lower the impact of transaction value on the additional returns created; In other words, with the increase in the value of transactions, the return of a company's stock will be equal to the return created in the market (there will not be too much fluctuation in the stock price) and a relatively small additional return will be created for investors, which is one of the signs of Markets with high liquidity. Excess return represents the difference between the company's stock return and the market return. Pástor & Stambaugh (2003), Choi and Cook (2005) and Fallah Shams et al. (2013) have used excess returns to calculate and model liquidity. As mentioned, the advantage of this method is its multidimensionality. Also, in this method, there is no need to use the suggested purchase or sale prices, which reduces the liquidity calculation error. Therefore, it is expected that the calculation of liquidity using this method will be closer to the reality and what is happening in the market.

Despite the characteristics of the liquidity index, researchers have doubts about the direction of the effect of liquidity on the performance of the company and present different and conflicting theories, which can be divided into two competing research streams. The first research flow is related to the positive effect of liquidity on company performance (Admati (2009); Amihud and Mendelson (2008); Baker and Austin (2004); and Maug (1998)). And another stream of research violates this claim and emphasizes the negative relationship between the two variables of

liquidity and performance (Bhide (1993); Coffee (1991) and Goldstein and Guembel (2008)).

In the first research stream, in addition to the effect of liquidity in reducing transaction costs and increasing operating profit, researchers showed that greater liquidity leads to the implementation of better corporate governance, more appropriate reward plans and more efficient investment decisions. So that in high liquidity, due to the appropriate criteria for evaluating managers and more effectively determining the right to reward managers, the desired corporate governance created as a result of mismanagement will be reduced.

On the other hand, in the course of rival research, researchers such as Coffee (1991), Bhide (1993) and Maug (1998) showed that in high liquidity and low transaction costs, major shareholders who are dissatisfied with the performance, exit the company more easily. As a result, they make less effort to monitor the behavior of managers. This situation causes the amount of corporate governance to decrease and has a negative effect on the company's performance.

In addition, Goldstein and Guembel (2008) believe that stockbrokers and dealers use stocks with high liquidity for short-term buying and selling, which leads to lower returns for investments and can have a negative effect on the company's performance.

In order to know the relationship between the liquidity behavior of stocks and the financial performance of companies in the newly emerging market of Iran, this research tries to measure the relationship between liquidity and the financial performance of the company, as well as the direction and extent of the impact of liquidity on the financial performance of accepted companies in the Iranian stock market, through experimental testing and of previously used models. The findings of this research, in addition to filling the research gap in this field, can be useful for investors and stock exchange and accounting policymakers in terms of providing a suitable criterion for evaluating the company's performance, and can also lead to the expansion of information disclosure requirements by listed companies.

Table (1) shows the summary of previous experimental studies.

Table (1): Summary of experimental studies

The authors	Subject	Result
Alhassan & Naka (2020)	Corporate future investments and stock liquidity: Evidence from emerging markets	The research results confirm the strong evidence of the relationship between future investments and stock liquidity, and the findings show that this relationship is influenced by financial constraints and the degree of financial market development.
Altay & Calgici (2019)	Liquidity adjusted capital asset pricing model in an emerging market: Liquidity risk in Borsa Istanbul	Their results show that including liquidity beta in the CAPM model increases the explanatory power of systematic risk on asset returns. The sensitivity of asset yield to market liquidity also shows a positive and significant effect.
Kang, et al. (2017)	Corporate investment and stock liquidity	Corporate investment helps the liquidity of stocks. This study shows a positive relationship between abnormal investment of companies and stock liquidity at a cross-sectional level.
Alizadeh & Nabi (1399)	Investigating the effect of liquidity on asset pricing using the Epstein-Zine model in the Iranian stock market	Liquidity risk is a pricing factor and its inclusion in pricing models leads to improved model performance.
Tariverdi & Khanlari (1398)	Investigating the effect of stock liquidity on the company's cash holding	The liquidity of stocks has an inverse and significant effect on cash retention. This means that with the increase in the liquidity of the company's shares, the maintenance of cash decreases.
EmamAlizadeh & Mohammadi (1398)	The relationship between stock liquidity and corporate governance with financial leverage	The results of the research show that liquidity has no effect on financial leverage. Also, the ownership percentage of institutional shareholders and the dual role of the CEO had a significant effect on financial leverage.
ForoughNejad , et al (1395)	Stock liquidity, investment efficiency and firm performance: evidence from the stock market	The empirical findings indicate that the first hypothesis of the research regarding the significant and positive effect of stock liquidity on investment efficiency is statistically confirmed. In this way, the liquidity of shares leads to an increase in investment efficiency. In addition, the investment efficiency also leads to an increase in the company's performance.

The sum of the researches and researches that have been reviewed show that the changes in the liquidity index mainly affect the financial performance of companies in the short term, especially the changes in the cash balance of companies. But its influence can be different depending on the type of market and the level of development of countries and companies.

Methodology

In this research, Efati et al. (1401) is used to measure the liquidity of the stock market. In this model, the effect of order flow on additional efficiency is estimated.

$$r_{k,t}^{xs} = \beta_0 + \beta_1 r_{k,t-1} + \beta_2 \text{sign}(r_{k,t-1}^{xs}) \cdot \text{val}_{k,t-1} + \varepsilon_{k,t}$$

where $r_{k,t}$ is the stock return for firm k at time t. $r_{k,t}^{xs}$ represents the excess return obtained through the difference between the company's stock return and the market return. that's mean:

$$r_{k,t}^{xs} = r_{k,t} - r_t^{MKT}$$

The variable $\text{sign}(r_{k,t-1}^{xs})$ is equal to one if the excess return of the previous period is positive and is equal to negative one if the excess return of the previous period is negative.

Also, $\text{val}_{k,t}$ is the value of k stock transactions in billions of Rials.

The variable $\text{sign} \cdot \text{val}_{k,t-1}$ was entered into the model in order to distinguish whether the transactions were with selling pressure from investors or with buying pressure. When investors sell a company's stock to market makers or other short-term liquidity providers such as brokers, the company's excess return should be negative. Also, when investors buy company shares from market makers, this additional return should be positive.

The β_2 parameter measures the degree of the transaction that affects the yield, which is equivalent to the liquidity index according to Efati et al.'s research (1401).

To check the financial indicators of companies, financial ratios widely used in this field are used. Financial ratios are tools that can be used to make decisions about the health and progress or financial and economic stagnation of companies. Types of financial ratios include liquidity ratios, profitability

ratios, market value ratios, activity ratios and leverage or coverage ratios. There are different variables to calculate each of these ratios. In fact, these ratios are helpful in analyzing financial reports and finding business opportunities and challenges. Financial ratios determine the structure of capital and assets, and according to what was said in the introduction, the structure of capital and assets ultimately causes managers to make decisions for the future of the company. Therefore, the investigation of factors affecting financial ratios is of particular importance, and according to the topic of this research, the effect of liquidity on financial ratios or financial indicators is investigated.

The following different patterns are used to check the effect of stock liquidity on financial indicators.

$$\text{Short Debt}_{k,t} = \beta_0 + \beta_1 \text{Liq}_{k,t} + \sum_{i=2}^n \beta_i X_{k,t} + \varepsilon_t$$

$$\text{Other Liab}_{k,t} = \beta_0 + \beta_1 \text{Liq}_{k,t} + \sum_{i=2}^n \beta_i X_{k,t} + \varepsilon_t$$

$$\text{Liq Asset}_{k,t} = \beta_0 + \beta_1 \text{Liq}_{k,t} + \sum_{i=2}^n \beta_i X_{k,t} + \varepsilon_t$$

$$\text{Log Asset}_{k,t} = \beta_0 + \beta_1 \text{Liq}_{k,t} + \sum_{i=2}^n \beta_i X_{k,t} + \varepsilon_t$$

$$\text{Fin Value}_{k,t} = \beta_0 + \beta_1 \text{Liq}_{k,t} + \sum_{i=2}^n \beta_i X_{k,t} + \varepsilon_t$$

$$\text{ROE}_{k,t} = \beta_0 + \beta_1 \text{Liq}_{k,t} + \sum_{i=2}^n \beta_i X_{k,t} + \varepsilon_t$$

Each dependent variable represents one of the financial ratios.

Short Debt: It is equal to the ratio of short-term debts to total assets; which represents leverage or coverage ratios.

Liq: It is equal to the liquidity of the company's shares.

X: other model control variables; which will be the same for all equations. The control variables are sales growth, fixed assets growth, inflation and economic growth.

Other Liab: It is equal to the ratio of other liabilities to total assets; which represents leverage or coverage ratios.

Liq Asset: It is equal to the ratio of liquid assets to total assets; which represents liquidity ratios.

Log Asset: is equal to the logarithm of total assets; which represents activity ratios.

Fin Value: is equal to the financial value of the assets to the book value of the assets; which represents market value ratios.

ROE: is equal to the return on equity; which represents profitability ratios.

The statistical population in this research is the active companies in the Tehran Stock Exchange. And among these companies have been selected that have been active in the stock market since 1387 and have not left the stock market until the end of 1400. Also, their trading symbol has not been stopped for more than 6 months.

To extract the data needed for the research, the databases of the Tehran Stock Exchange Organization, the stock trading system, the financial reports of accepted companies and the companies' databases, the Rahavard Novin software and the Kodal website were used. In addition to survey research, this research is a post-event research in the field of economic proof research based on real historical information. In this research, after extracting sufficient information from the samples and extracting and calculating the value of each of the

variables, it has been analyzed and the coefficients of the variables have been calculated using EXCEL and STATA12 software.

Result

The results of Manai investigation using IPS Manai test showed that the research variables include liquidity index, ratio of short-term debts, ratio of other debts, ratio of liquid assets, logarithm of assets, ratio of market value and ratio of equity at 95% confidence level is stationary.

Table (2) shows the descriptive statistics of research variables.

One of the most important points of table (2) is the average amount of liquidity. The value of 0.0055 during the years 1387-1400 indicates that for every one billion Rials invested in the Tehran stock market, there was an additional return of about 0.55% (equivalent to 5.5 million Rials), which is far from zero. . And it shows that the Iranian stock market is still far from the financial markets of the world in terms of liquidity.

The estimation of liquidity in this research can be seen in chart (1).

Table (2): Descriptive statistics

Depended Variable	Average	Standard Dev	Min	Max
Liquidity	0.0055	0.0052	-0.0002	0.0172
Liq Asset	0.51	0.2	0.003	0.95
Short Debt	0.54	0.25	0.04	3.72
Other Liab	0.08	0.11	0.0002	1.75
Log Asset	14.02	1.49	10.03	19.31
Fin Value	0.0009	0.0007	0.0004	0.006
ROE	0.37	0.28	-3.002	0.95

Source: research findings

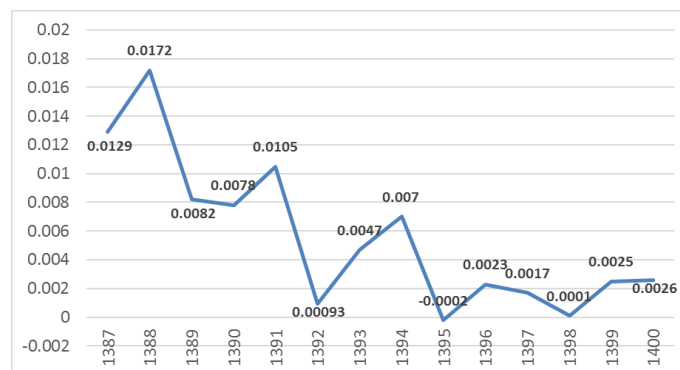


Chart (1): annual liquidity

Source: research findings

As the diagram (1) shows, the best level of liquidity (the lowest level of liquidity risk) is respectively related to the years 2018 (+0.0001) and 2015 (-0.0002) and the worst level of liquidity (the highest level of liquidity risk) is related to 2018 (0.0172) and 2011 (0.0105).

Also, chart (1) shows that until 2013, the level of liquidity was far from zero, which means that the market liquidity was very low and the risk of liquidity was high, but after that, the power of market liquidity increased and the risk of liquidity decreased. And in 2018, it reached the highest level of liquidity. It can be said that in 2018, there was only about 0.01 percent (equivalent to 100 thousand Rials) of additional returns for every one billion Rials.

Another important index of the research is the ratio of liquid assets, which according to table (2), its average for listed companies during the years 2010-2014 was equal to 0.51. This means that half of the assets of stock exchange companies were liquid assets. Chart (2) shows the ratio of liquid assets of companies during different years.

As it is known, the ratio of liquid assets has increased over time.

Chart (3) shows a comparison between the liquidity index and the ratio of liquid assets of companies.

As can be seen, there is almost an inverse relationship between the liquidity criterion and the ratio of liquid assets of companies. In the years when liquidity risk was high (1387-1393), the ratio of liquid assets of companies was low, with the reduction of liquidity risk, the ratio of liquid assets of companies also increased. In order to better examine the relationship between these two variables as well as other financial indicators, the estimation of the main research patterns is done.

In order to estimate the research patterns using the panel data method, the estimation method of each pattern must be determined first. Table (2) shows the results of F-Limer, Brosh Pagan and Hausman tests. The results of estimation of research patterns are shown in table (4).

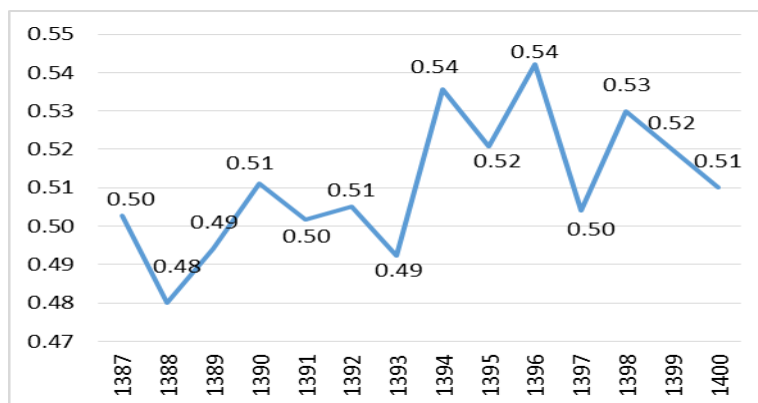


Chart (2): Liquid assets ratio
Source: research findings

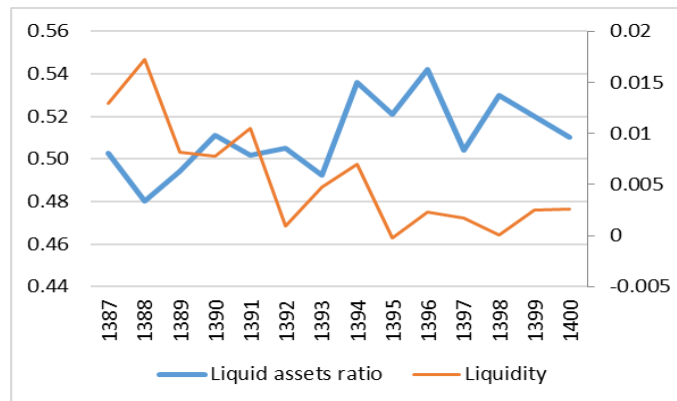


Chart (3): Comparison of liquidity criteria and Liquid assets Ratio of companies
Source: research findings

Table (3): The results of examining the panel data models

Depended Variable	F-Limer	Brosh Pagan	Hausman	Result
Short Debt	0.000 (11.25)	0.000 (2135.3)	0.000 (-208.9)	Fixed
Other Liab	0.000 (7.18)	0.000 (1201.5)	0.03 (11.65)	Fixed
Liq Asset	0.000 (21.73)	0.000 (4209.4)	0.002 (18.04)	Fixed
Log Asset	0.000 (13.8)	0.000 (9295.5)	0.74 (2.73)	Random
Fin Value	0.000 (11.95)	0.000 (2391.1)	0.13 (8.43)	Random
ROE	0.000 (11.51)	0.000 (2184.5)	0.000 (-42.8)	Fixed

Source: research findings

Table (4): The results of estimating the main research patterns

Variable	Short Debt	Other Liab	Liq Asset	Log Asset	Fin Value	ROE
Liq	1.15 (0.03)**	-0.32 (0.23)	-1.30 (0.001)***	-1.53 (0.00)***	-0.0001 (0.93)	-0.80 (0.17)
Sale Gro	-0.01 (0.08)*	0.003 (0.32)	0.009 (0.05)**	0.009 (0.56)	0.0001 (0.00)***	0.008 (0.24)
Ass Gro	-0.004 (0.28)	-0.0002 (0.89)	-0.0009 (0.00)***	0.0005 (0.58)	0.00002 (0.16)	0.0005 (0.29)
Inf	-0.14 (0.04)**	0.002 (0.93)	-0.14 (0.003)***	3.10 (0.00)***	0.0007 (0.004)***	0.13 (0.06)*
Growth	-0.18 (0.1)*	-0.05 (0.36)	-0.17 (0.02)**	5.91 (0.00)***	0.0009 (0.02)**	0.22 (0.06)*

Source: research findings

Table (3) shows the results of estimation of research patterns using panel data method. In this table, the coefficient value of each variable is included along with its significance value. The results of the above table are as follows.

- Liquidity criterion has a positive and significant effect on the amount of short-term debts of companies by 1.15.
- Liquidity criterion has no significant effect on other debts of a company.

- Liquidity criterion has a negative and significant effect on the amount of liquid assets of companies to the extent of -1.30.
- Liquidity criterion has a negative and significant effect on the amount of companies' assets to the extent of -1.53.
- The liquidity criterion does not have a significant effect on the ratio of the market value of a company's assets.
- The liquidity criterion does not have a significant effect on the return on equity of a company.

In the analysis of the above results, it can be said:

- As the liquidity risk of a company's shares increases, the amount of short-term debts of that company increases. This result shows that companies with more short-term debts are more exposed to liquidity risk. These companies can reduce their short-term liabilities by increasing the liquidity of their shares (reducing liquidity risk). Examining the research data also shows that in 2018, when we saw the lowest amount of liquidity in the stock market (0.017), the average ratio of short-term debts of companies was about 55%. But in 2018, when we saw the improvement of liquidity index and reduction of liquidity risk (0.0001), the ratio of short-term debts of companies was about 52%. And in 1400, with the increase in the liquidity risk of stocks in the stock market, the average ratio of short-term debts of companies has increased to 53%.
- Liquidity criterion does not have a significant effect on other debts of a company. This result shows that considering that changes in the liquidity index are generally in short-term periods, it has no effect on the long-term financial indicators of companies. As mentioned in the previous paragraph, increasing liquidity can reduce short-term debts, but it has no effect on long-term debts.
- As the liquidity risk of a company's shares increases, the amount of liquid assets of that company decreases. Companies that need high liquidity, considering the negative impact of increasing the risk of stock liquidity on liquid assets, can increase the company's liquidity in

the short term by using the elasticity of the stock market. On the other hand, some companies that have more liquid assets have less risk in facing liquidity shocks. Companies that are more afraid of the financial pressures caused by the shocks of reducing the liquidity of stocks usually keep more liquid assets. Numerous empirical studies in the United States (Opler et al., 1999; Choi and Kim, 2001; Hubbard et al., 2002) have shown that companies with high information costs in order to deal with liquidity risks and considering the direct impact of stock liquidity risk on company liquidity (the reverse effect of liquidity amount or the same additional return on company liquidity), They usually have more cash reserves than other companies. Examining the research data also shows that in 2008 we witnessed the highest level of liquidity risk in the stock market (0.017). The average ratio of liquid assets of companies is about 48%, but in 2018, when we saw the lowest level of liquidity risk (0.0001), the ratio of liquid assets of companies was more than 53%. And in 1400, with the increase in the liquidity risk of stocks in the stock market, the average ratio of liquid assets of companies has decreased to 51%.

- As the liquidity risk of a company's shares increases, the amount of assets of that company decreases. As mentioned in the previous paragraph, reducing the liquidity risk of stocks increases the liquid assets and as a result increases the total assets of the companies. On the other hand, it can be said that the increase in liquid assets leads to better decision-making by company managers in the company process, and as a result, the performance of companies improves and their total assets improve.
- The liquidity criterion does not have a significant effect on the ratio of the market value of a company's assets. This index, which is a representative of Tobin's Q index, indicates the valuation of the cost of assets. The estimation results show that changes in the stock liquidity index have no effect on the market value ratio of assets.

As the estimation results showed, in order to control their short-term debts, in addition to other related tools in accounting, companies can use the liquidity power of their shares in the best way. Companies can reduce the liquidity risk of their stocks with proper market management, so that the value of their stock transactions can increase. By increasing the liquidity and value of transactions, the company's liquidity power increases and as a result, it can reduce its short-term debts.

Also, as mentioned, the increase in liquidity increases the company's liquidity. As a result, the company's liquid assets increase, and in this way, they can reduce part of their short-term debts and make short-term investments, which ultimately leads to an increase in the company's profitability.

Ramsey test is used to check the specification error in the estimated model. Ramsey regression equation error test is a general specification test for linear regression model. Specifically, this test examines whether non-linear combinations of the considered values contribute to the explanation of the response (dependent) variable. The intuition behind the test is that if nonlinear combinations of explanatory variables have any power in explaining the response variable, the model is misspecified; In the sense that the data generation process may be more approximate with a polynomial or another non-linear function. If the probability values of the code test are less than 0.05, it means that the estimated model has a specification error. The table below shows the results of the code test for annual data.

Table (5): The estimation results of Ramzi test

Model	Statistic	Prob	Result
Model (3)	0.78	0.4	No specification error
Model (4)	0.49	0.6	No specification error
Model (5)	0.65	0.55	No specification error
Model (6)	0.56	0.58	No specification error
Model (7)	0.45	0.6	No specification error
Model (8)	0.8	0.43	No specification error

Source: research findings

Considering that the estimated test probability value for the mentioned models is more than 0.05, therefore, the estimated models do not have specification errors. In the end, the hypothesis of the research can be checked. The results of the estimation of the research models showed that the level of liquidity has a significant effect on the key indicators of companies, including the indicators of the ratio of short-term debts, the ratio of liquid assets and the amount of total assets. Therefore, the research hypothesis is also confirmed.

Discussion and Conclusion

Liquidity is one of the most important demands of every investor in the financial markets. So, before making profit in the market, freedom of entry and exit is important for him. In order to increase liquidity, financial markets take actions at the macro level as well as at the micro level (microstructure) in order to increase the liquidity of the market.

In this study, the effect of changes in the liquidity index of shares of active companies in the Tehran Stock Exchange on the key financial indicators of those companies was investigated to explain the temporary exposure to liquidity risk. The results of the research showed that the liquidity criterion has a positive and significant effect on the amount of short-term debts of companies by 1.15. In other words, as the liquidity of a company's shares increases, the amount of short-term debts of that company decreases. Also, the liquidity criterion has a negative and significant effect on the amount of liquid assets of companies to the extent of -1.30. This means that with the increase in the liquidity risk of a company's shares, the amount of liquid assets of that company decreases. And finally, the liquidity criterion has a negative and significant effect on the amount of companies' assets to the extent of -1.53. This means that with the increase in the liquidity risk of a company's shares, the amount of that company's assets will decrease. Considering the positive relationship between liquidity risk and the ratio of short-term debts, as well as the negative relationship between liquidity risk and the ratio of liquid assets at the level of all companies, it seems that companies with more liquid assets may use such assets as a source of leverage to use it to invest in future investment opportunities. and do not need financial security through debts; Therefore, it is suggested that

the users of the financial information of the companies and also the stock exchange organization should not consider the high current ratio of the companies as a negative message and should be more careful in this regard. Also, for future studies, it is suggested to investigate the various causes of increase or decrease in the liquidity of companies' shares, such as disclosure quality, profit quality, type of ownership, concentration of ownership, etc., and provide a solution to improve liquidity.

References

- Admati, P. & Pfleiderer (2009). "The 'wall street walk' and shareholder activism: exit as a form of voice". *Review of Financial Studies* 2645–2685.
- Alhassan, A., & Naka, A. (2020). Corporate future investments and stock liquidity: Evidence from emerging markets. *International review of economics & finance*, 65, 69-83.
- Alizadeh, S., & Nabi, M. (1399), investigating the effect of liquidity on asset pricing using the Epstein-Zain model in the Iranian stock market, *Modern Economy and Trade Quarterly*, Volume 15, Number 1 (46), 27-58 .
- Altay, E. & Calgici, C. (2019), Liquidity adjusted capital asset pricing model in an emerging market: Liquidity risk in Borsa Istanbul, *Borsa Istanbul Review*, Vol. 19, No. 4, 297-309.
- Amihud, Y., Mendelson, H (2008) "Liquidity, the Value of the Firm, and Corporate Finance". *Journal of Financial Applied Corporate Finance*.
- Baker, M., & Stein, J. C. (2004). Market liquidity as a sentiment indicator. *Journal of financial Markets*, 7(3), 271-299.
- Bhide, A., (1993). "The hidden costs of stock market liquidity". *Journal of Financial Economics* 34, 31–51.
- Bond, P., Edmans, A. and I. Goldstein. (2012). The Real Effects of Financial Markets. *Annual Review of Financial Economics*, Vol. 4, 339-460.
- Bokpin, G.A. (2009). Macroeconomic development and capital structure decisions of firms, *Studies in Economics and Finance*. 26 (2): 129-142.
- Choi, Woon Gyu, and Yungsan Kim, (2001), "Monetary Policy and Corporate Liquid Asset Demand," IMF Working Paper, 01/177 (Washington: International Monetary Fund).
- Coffee, J. (1991). "Liquidity versus control: the institutional investor as corporate monitor". *Columbia Law Review* 91, 1277– 1368.
- Efati, F., Naqdi, Y., Mahmoudzadeh, M., & Lashkarizadeh, M (1401), Estimating the risk level of stock transactions in Tehran stock exchange using the liquidity criterion, *applied economic theories*, volume 9, number 2, 1-20.
- Emamalizadeh, N., & Mohammadi, A. (1398), the relationship between liquidity of shares and corporate governance with financial leverage, *Quarterly of New Achievements in Humanities Studies*, second year, number 11, 64-82.
- Fallah Shams, M., Karimi Zand, M., Akasadi, L., & Safari, Z (1392). Investigating the relationship between liquidity risk and market risk with abnormal returns in the Fama and French three-factor model in Tehran Stock Exchange. *Journal of Financial and Securities Engineering*, 20, 165-149.
- Fang, j. (2012). *Stock Liquidity, Price Informativeness, and Accruals-based Earnings Management* (doctoral dissertation). Louisiana State University.
- Foroughnejad, H., Moradi Joz, M; Heydari, H., & Masoumi, Q (1395), Stock liquidity, investment efficiency and company performance: Evidence from Tehran Stock Exchange, *Investment Knowledge Quarterly*, Year 5, Number 18, 179-196.
- Gerken, W. C. (2011). *Blockholder Ownership and Corporate Control: The Role of Liquidity*. Working Paper.
- Goldstein, I., Guembel, A., (2008). "Manipulation and the allocational role of prices". *Review of Economic Studies* 75, 133–164.
- Kang, M., Wang, W., & Eom, C. (2017). Corporate investment and stock liquidity: Evidence on the price impact of trade. *Review of financial economics*, 33(1), 1-11.
- Karpoff, J. M. and X. Lou. (2010). Short Sellers and Financial Misconduct. *The Journal of Finance*, Vol. 65, 1879- 1913.
- Kohher, M. and Rahul, S. (2007). Strategic assets, capital structure, and firm performance. *Journal of Financial and Strategic Decisions*. 3: 23-36.

- Maug, E., (1998). "Large shareholders as monitors: is there a tradeoff between liquidity and control?" *Journal of Finance* 53, 65–98.
- Myers S.C. (1983). The search for optimal capital structure. *Midland Corporate Finance Journal*. 24 (4): 124-173.
- Pástor, L., & Stambaugh, R. F. (2003). Liquidity risk and expected stock returns. *Journal of Political economy*, 111(3), 642-685.
- Tarivardi, N., & Khanlari, M. (1398), Investigating the effect of stock liquidity on the company's cash retention, *Accounting and Management Perspectives Quarterly*, Volume 2, Number 20, 114-127.
- Waweru, N., M., Munyoki, E., and Uliana, E. (2008). The effects of behavioral factors in investment decision-making: a survey of institutional investors operating at the Nairobi Stock Exchange. *International Journal of Business and Emerging Markets* Vol.1, No.1, 24 – 41.
- Wen, Y.-F. (2010), "Capital investment decision, corporate governance, and prospect theory", *Procedia Social and Behavioral Sciences*, Vol. 5, 116-126.

