

Survey The Influence of Stock Liquidity on the Stock Return of Corporations Listed at The Tehran stock Exchange

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ABSTRACT

The Speed of liquidity of the asset is an important factor of decision makings at the capital market. Investors consider the amount of liquidity in choosing investment options besides their risk and return. The impact of this attribute of the securities on the variables of capital market is the subject of many financial researches. The purpose of this research is surveying the Influence of Stock Liquidity on the Stock Return Corporations Listed at The Tehran stock Exchange. In this research Bid-Ask Spread and Share Turnover were considered as the criteria of liquidity and the size of the firm & the ratio of book value to market value and finance leverage were taken as the control variables. In this way, 89 firm of the statistical population were selected as the research sample from 2005-2009. Research hypothesis were tested using multiple-variables regression method. The results of the research showed that there is a positive relationship between Bid-Ask Spread and Share Turnover as the criteria of liquidity with stock return corporations listed at the Tehran stock exchange.

Key Words: Stock Liquidity, Stock Return, Bid-Ask Spread, Share Turnover.

1- INTRODUCTION

Due to the width and depth of every financial market, there are different tools for investing; so, the investors choose their asset considering investment benefits and risks. A key factor in investments is liquidity which is favorite at competitive markets. Determinant in market survival, liquidity refers to the possibility of fast and low cost transaction, without impressing defined prices (13). The role of liquidity is of key importance in valuing assets; because, investors ask if there is a good market for their assets while selling them (8). The more asset risk, the more investor expectation for getting much return. An effective factor in asset risk is liquidity. Although it plays an important role in decision-makings, changing it into an objective and quantitative factor and its measurement don't have long history. The issue of liquidity has been posed as a determinant stock return factor since mid-1980s. Some investors may need their assets as soon as possible; In this case, liquidity receives more importance. So, the assets being welcomed by security exchange markets can be because of their liquidity. The main purpose of this research is surveying the Influence of Stock Liquidity on the Stock Return of Corporations Listed at The Tehran (IRAN) Stock Exchange.

2- Theoretical background

Since mid-1980s, liquidity has been recognized as a determinant factor in financial innovations. So far, many researches on effective factors of asset return, like liquidity have been done (2). Liquidity of a security implies the possibility of selling it fast. The faster you can sell a security with low cost, the more capability of liquidity it is claimed to have. The securities being transacted daily and repetitively have more liquidity and lower risk. The less liquidity a stock has, the less attractive it will be for the investors, unless it yields more benefits for its owners (8). Weimin Liu has defined liquidity in the following way:

"Liquidity refers to the ability of dealing a huge amount of securities with low cost, fast, and low price change. Low price change implies that asset price doesn't change enormously during order to purchase." (9).

Aitken & Comerton refer to liquidity as the ability of changing securities into cash with low cost (1). Liquidity degree of an investment is low when its fair price can't be achieved fast. Stock liquidity impresses investor's decision-makings while organizing investment portfolio. In other words, rational investors request more return for risky stocks with low liquidity. Because, low liquidity equals high risk which should accompany more return (4). Liquidity is a multi-dimensional criterion whose intangible nature and multi-dimensionality causes not having a single or definite criterion for its measurement; so, different single criteria representing one aspect of liquidity should be used. In this paper, choosing liquidity criteria was based on the most applicable ranking of criteria, introduced by Wyss (2004). It must be notified that

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the first frequent criterion includes Bid-Ask Spread and others like Share turnover rate, Number of transaction, transaction waiting time, Trading volume, and etc are in lower ranks.

Bid-Ask Spread implies the difference between the price that should be paid for immediate purchase and the price that can be received by immediate sale. This criterion as a part of market has recently received high significance in financial literature and is considered an important liquidity criterion in asset market. The less Bid-Ask Spread, the sooner seller and buyer compromise over price and stock trading value increases which in turn it leads to liquidity increase of stock market. Bid-Ask Spread consists of 3 costs: 1. the costs of preparing order, 2. retaining cost of stock, and 3. incorrect choice cost. Share turnover is calculated by transacted share volume divided by distributed share number in a certain time interval. This criterion is calculated annually. Datar mentions 2 advantages of using Share turnover rate as a replacing variable of liquidity: first, this replaced variable has a sound theoretical foundation. Second, finding the data of Share turnover rate is rather easy, enabling to get the monthly changes in liquidity (6).

3- LITERATURE REVIEW

Here, first, some papers on liquidity criteria with return and then some on liquidity with return will be investigated. Amihud and Mendelson (1986) used Bid-Ask Spread, as liquidity criterion, their results showed a positive relationship between Bid-Ask Spread and expected return of investors, The more Bid-Ask Spread expected return of investors (3). Marshall and Young (2003) investigated the relationship between liquidity and return of accepted stocks in security exchange of New Zealand, they Using Bid-Ask Spread, share turnover rate, and amortization Bid-Ask Spread simultaneously and concluded that liquidity effect of those 3 indices is not consistent. However, there are evidences for liquidity increase in January (11). Dey (2005) investigated how global market growth impacts liquidity and if it is a determinant factor in transitory return of those markets. He also measured liquidity with share turnover rate and concluded that investors expect higher return from the markets with high share turnover rate (7). Omri, Zayani, and Loukil (2004) investigated the impact of liquidity on stock return of Tunisia Stock exchange by cross-sectional regression and monthly data from 1998-2003 and concluded a negative relationship between liquidity and stock return (12). Marshall (2006) investigated the relationship between stock return and its liquidity in Australian Security Exchange, he using a new liquidity criterion, order value mean, and concluded that liquidity is a determinant factor in stock return (10). Chang *et al* (2010) studied the impact of liquidity on stock return with Using of new evidences in Japan and concluded a meaningful and negative relationship between them (5).

4- Hypotheses

H1: There is a relationship between Return of Stock and Bid-Ask Spread.

H2: There is a relationship between Return of Stock and Share Turnover.

5- METHODOLOGY

This research is descriptive-correlation type and to test the hypotheses and it is applied in scope because our aim is to utilize these results in capital market. We have used the ordinary least square root (OLS) regression. This method has optimal statistical characteristics such as the best linear estimator. But to remove problems such as divergent variance generalized least square root (GLS) is used.

The statistical method used in this research is regression using integrated data. The hypotheses are tested by the results gained by economic measurement patterns and multiple-variable regression. In order to identify the meaningfulness of the regression pattern Fisher's F has been utilized. To study the meaningfulness of independent variables' coefficient in each pattern, t-statistics with 95% assurance level has been used. To test the data to be normal, we have used Kolmogorov-Smirnov (K-S) test. The statistical results gained by Durbin-Watson resulted from software in all tests show that there is not any problem of co-efficiency. To do this, SPSS software version 18 has been used.

1-5- Variables

In this research Bid-Ask Spread and Share Turnover were considered as the criteria of liquidity and the size of the firm & the ratio of book value to market value and finance leverage were taken as the control variables.

Table3- variables

Return of Stock	Dependent Variable	$R_{it} = \frac{P_t(1 + \alpha + \beta) - (P_{t-1} + c\alpha) + DPS_t}{P_{t-1} + c\alpha} \times 100$
Bid-Ask Spread	Independent Variable	$SPREAD = \sum_{t=1}^n \frac{(AP_t - BP_t)}{(AP_t + BP_t)/2} \times 100$
Share Turnover	Independent Variable	$TURNOVER = \frac{NST}{NSO} \times 100$
Firm Size	Control Variable	LN (ASSET)
Ratio of Book Value on Market Value	Control Variable	Book Value/ Market Value
Financial Leverage	Control Variable	Total to Debt/total to Assets

This research is descriptive-correlation type and to test the hypotheses, we have used the least common squares' regression and it is applied in scope because our aim is to utilize these results in capital market. Location range for the research is firms accepted in Tehran Stock Exchange and time range is the years between 2005 and 2009. In this research systematic deletion method has been used to choose our statistical samples. In order to choose our statistical samples, those firms having the following characteristics have been chosen as our statistical samples and other were omitted:

- a) Since the nature of activity is different for the investment firms, insurance, leasing, and banks, the activity of firms selected should be production.
- b) To choose a convergent sample, firms should have been chosen before the year 2005 in Tehran Stock Exchange and its stocks should have been purchased from the start of the year 2005.
- c) In order to select active firms, the exchanges of these firms should have been active during the years between 2005 and 2009 and there should not be any stops more than three months in their activities.
- d) In order to be compared properly and avoid divergences, the fiscal year should end on 29th of Esfand (March 21st.) and during the years between 2005 and 2009 they shouldn't have changed their fiscal year.
- e) Financial statements and descriptive notes about them should be accessible.

For the sake of gathering the needed data related to financial statements of sample companies, we use the electronic archival data provided by TSE. In some cases that, the needed data is incomplete we use the manual archive existed in the TSE's library. We also, acquire a part of needed data from Tadbirpardaz and Rahavardnovin (two Iranian Software).

2-5- Patterns used in this research

Regarding the above mentioned issues about variables described, research patterns include pattern related to the first hypothesis and to hypothesis two. There are Two multiple regression patterns which are commonly shown as follows:

$$R = \beta_0 + \beta_1 SPREAD + \beta_2 SIZE + \beta_3 B / M + \beta_4 FL + \beta + \varepsilon \text{ (Model 1)}$$

$$R = \beta_0 + \beta_1 TURN + \beta_2 SIZE + \beta_3 B / M + \beta_4 FL + \beta + \varepsilon \text{ (Model 2)}$$

$$H_0 : \beta_1 = \beta_2 = 0$$

$$H_1 : \beta_1 \neq \beta_2 = 0$$

In this formula; dependent variables include; Return of Stock (R). Also independent variables include; Spread: Bid-Ask Spread and Turn: Share Turnover. Controlled Variables include; FL: Financial leverage, Size: Firm Size, B/M= Ratio of Book Value on Market Value. The constant co-efficient of β and ε error co-efficient which is calculated for each period separately, has a normal distribution and is independent of regression factors. If the presupposition H_0 disapproved, H_1 will be accepted. This means that, there is a meaningful relationship between dependent and independent variables being tested.

6- Finding and Results

Table 1 includes descriptive statistics of data studied to be used in linear regression. Regarding the fact that we will use the aggregation of time series data and cross sectional data to test the hypotheses of the research, the number of firm-year observations data was 445. Regarding the descriptive statistics, the distribution criterion of these variables in different firms is low.

Table (1): descriptive statistics of data studied

Variables	R	Spread	Turn	Size	B/M	FL
N	445	445	445	445	445	445
Mean	53.94	3.41	2.71	26.92	0.84	0.64
Std.Deviation	80.92	1.75	1.65	1.77	0.71	0.19
Skewness	0.29	0.44	0.62	0.39	0.24	0.64
Kurtosis	-0.18	2.11	0.40	-0.06	-0.38	1.55

The results of regression model can be valid when the presuppositions of its usage are approved. One of these presuppositions is that the research variables should be normal. To test the normality of the data, Kolmogorov-Smirnov (K-S) test has been used. Also Durbin-Watson test has been used to study not having any problem of co-efficiency among leftover sentences. The resulted statistics of Durbin-Watson test resulted from the software in all tests show that there is not any problem of co-efficiency itself. Regarding the results in table (2), by comparing the meaningfulness level of variables studied for our sample firms, and since the amount of meaningfulness level is more than 0/05 and there exists the assurance level of %95 (with %5 error level), the presupposition H_0 is accepted and variables studied, benefit from a normal distribution.

Table (2): Kolmogorov-Smirnov Test

Variables	R	Spread	Turn	Size	B/M	FL
Kolmogorov-Smirnov z	1.345	1.236	1.328	.854	.841	1.474
Sig	.054	.094	.059	.459	.479	.066

1-6- Testing the first main hypothesis

The first main hypothesis of the research studies the relationship between Return of Stock and Bid-Ask Spread. The results of regression are shown in table (3).

Table (3): The results of regression between Return of Stock and Bid-Ask Spread

Variables	symbol	variable's name	Coefficient	T	Sig
dependent variable	R	Return of Stock	-	-	-
Constant	α	α	-31.209	-5.310	.000
Independent variables	X1	Bid-Ask Spread	12.914	3.447	.039
Controlled Variables		financial leverage	-24.429	-1.445	.147
		Ratio of Book Value on Market Value	25.727	4.941	.000
		Firm size	12.633	5.940	.000
		Durbin-Watson	2.215	-	-
		F	15.714	-	.000
		R	.465	-	-
		R Square	.217	-	-
		Adjusted R Square	.209	-	-

As it is shown in this figure, the variables of Bid-Ask Spread, Ratio of Book Value on Market Value and Firm size (p -value < %5) have a meaningful relationship with Return of Stock. The variables' co-efficient shows that the effect of Book Value on Market Value on Return of Stock is more than other variables studied. The Bid-Ask Spread, Ratio Book Value on Market Value and Firm size has a direct relationship with Return of Stock. Regarding the amounts of figure F the balanced regression patterns are meaningful and considering the identification co-efficient, these variables explain %43.2 of changes in Return of Stock.

The second main hypothesis of the research studies the relationship between Return of Stock and Turnover. The results of regression are shown in table (4).

Table (4): The results of regression between Return of Stock and Turnover

Variables	symbol	variable's name	Coefficient	t	Sig
dependent variable	R	Return of Stock	-	-	-
Constant	α	α	-19.581	-3.851	.000
Independent variables	X1	Turnover	25.514	11.434	.000
Controlled Variables		financial leverage	-15.271	-1.953	.341
		Ratio of Bookvalue on marketvalue	7.610	2.321	.014
		Firm size	6.997	3.632	.000
		Durbin-Watson	1.912	-	-
		F	64.506	-	.000
		R	.608	-	-
		R Square	.370	-	-
		Adjusted R Square	.364	-	-

As it is shown in this figure, the variables of Turnover, Ratio of Book value on market value and firm size (p-value < 5%) have a meaningful relationship with Return of Stock. The variables' co-efficient shows that the effect of Turnover is more than other variables studied. The Turnover and, Ratio of Book value on market value and firm size has a direct relationship with Return of Stock. Regarding the amounts of figure F the balanced regression patterns are meaningful and considering the identification co-efficient, these variables explain %64.5 of changes in Return of Stock.

7- Conclusion

1- There is a positive and meaningful relationship between Return of Stock and Bid-Ask Spread. It implies that the less Bid Ask Spread, the faster transaction rate will be which raises transaction volume and liquidity as well. This result agrees with the researches of Amihud & Mendelson (1986), Datar et al (1998), Chordia et al (2001), Acharya & Pedersen (2005), Dey (2005), Longstaff (2005), Marshall (2006) and Atolia et al (2011).

2- There is a positive and meaningful relationship between Return of Stock and Share Turnover rate. In other words, raising share turnover rate in The Tehran stock Exchange, increases corporation return. This result agrees with the researches of Baker & Stein (2003).

In this study, the relationship between stock return and liquidity was tested; concluding showed that there is a positive and meaningful relationship between stock liquidity with criteria of Bid-Ask Spread and share turnover rate and stock return. It implies that in Tehran stock Exchange. This result agrees with the researches of Marshall & Young (2003), Omri, Zayani & Loukil (2004), Fujimoto & Masahiro (2006) and Chang et al (2010). But this contradicts with the finding Yang Hu (1997). liquidity stocks are welcomed by people, leading to decrease at Bid-Ask Spread and cost increase and stock return. Better welcome from market can be added to these advantages which yields higher return for those shares and capital increase as well.

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