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Investigate the relation between liquidity Risk and information Asymmetry and Excess returns

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ABSTRACT

Investors are as the main suppliers in the company, and the applicant of the full details and correct of company, information asymmetry, and it increase false choices of market participations. If the shareholder's stock increases by the confidential and private information, stock liquidity decreases in the company, because in the case of stocks with high information asymmetry and liquidity risk, traders can earn abnormal profits. Due to this fact that investors choose their desired assets according to the returns and investment risks, if the risk associated with the asset, increase, investor would expect to receive a higher return. One of the factors affecting to the risk is the liquidity ability. If the share liquidity is low, it becomes less attractive, unless a higher return belongs to the investor. In this study, the effective factors to the spread with respect to the both factors, firm-specific variables and market factors have been analyzed. Also, by considering the important relation between risk and returns, the relation between liquidity and excess return of the firm and also the relation between market liquidity and market excess return is investigated. And the test of research hypothesis is accepted for 67 firms by using multiple regression analysis with combined data patterns and they are investigated in Tehran Stock Exchange during the period 1382 to 1390. The results showed that there is a negative relation between turnover, number of trades and market liquidity with information asymmetry. There is a positive relation between the liquidity risk of firm and liquidity risk of market and information asymmetry. Also, there are no positive relations between excess return of the firm and liquidity risk of the firm and between the excess return of the market and liquidity risk of market.

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INTRODUCTION

The efficient financial markets facilitate the smoother transfer of money from those who have saving to those who have profitable investment opportunities. Such markets reflect the high level of trading volume and the high market participation. In such markets, because investors are convinced that prices of securities are reasonably efficient (Fairly) and they enter into the transaction, therefore the transaction's volume in the market increase, because there is no information risk. That they are called, increasing of market liquidity [17]. Information asymmetry; when the investors have especial information with different quality [33]. This information asymmetry is a result of the presence of investors with confidential information, and it creates costs by inappropriate choose in transactions between buyers and sellers of the firm's capital. And this wrong choice shows the reducing of liquidity for the firm's capital [23]. Empirical evidence indicates that an increase in information asymmetry between mangers and shareholders have a direct relation with the number of investors and low level of securities liquidity and reduce of the trading volume and in general, reduced social benefits from these trensactions [5]. Therefore, the reduce of information asymmetry cause the increase in trading volume and liquidity. So the liquidity risk can effect on the amount of information asymmetry, and in this study, this relation is discussed. Since that the investors are the main suppliers of the company's resource, they are applicant from the complete and correct information. Information asymmetry between investors creates the inaccurate choice in determining the appropriate prices [15]. Because of this fact, determining the factors that effect on information asymmetry looks essential. Also, by considering this issue that investors choose their desired assets due to the investment risk and returns. Also the risk is increased by assets, the investor will expect

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to receive a higher return and one of the most important and effective factors on assets risk, is their liquidity. If a share have lower liquidity, it becomes less attractive, unless it gives to its holder, a higher return.

Literature Review:

Information asymmetry, when the investors have especial information with different quality [16]. Information asymmetry resulting from the presence of investors who have confidential information, it creates costs through the wrong choice in transactions between buyers and sellers of the firm's capital. And this wrong choice indicates the lower liquidity level for firm's capital. The firm's liquidity is referred to the buy ability and selling stock in shortest time with the lowest effect on the current market price. In stock exchange market for maintaining the liquidity in market, they use some individual's service called Market-makers. The duty of the Market-makers is creating the financial markets for investors. Instead, to compensate for such services that they have the right to quote and offer different prices for buying and selling capitals which is known as the price of buying and selling stocks [12]. Market liquidity is defined as the market's ability to attract large amounts of transactions without creating severe fluctuations in the price. In addition, the main feature of liquidity markets is the small gap between proposed price between buy or sells [16]. Information asymmetry increases the wrong choose of Market-makers. This issue led that by improving the field of proposed buying and selling price, they react to the liquidity reduction. In other words, the higher level of information asymmetry will be associated with higher price. Empirical evidence suggests that an increase in information asymmetry between managers and shareholders have a direct relation with reduction of the investor's number and decreasing the securities liquidity, reducing the transaction's volume and in general, reduction of social benefits from these transactions [6]. Therefore, the information asymmetry reduction, increase the transactions and liquidity volume. So the liquidity risk is an issue that can effect on the information asymmetry and it is discussed in this research. In investigating the effective factors on information asymmetry, it is necessary to consider the market-wide factors in addition to the specific variables of the market. In particular, these variables include transaction's volume, transaction's number, firm size, stock quotes, firm liquidity risk, market liquidity and market liquidity risk [35]. [21] showed that if the stocks of the shareholders increase as much as confidential and private information, the firm's stock liquidity decreases, because in the case of stock with high information asymmetry and high liquidity risk, traders can hardly earn abnormal profits. Recent research has shown that reduction of information asymmetry cause the reduction of wrong choice's cost and reduction of moral hazard and increase the market liquidity [1]. Also, due to this fact that investors choose their desired assets with regard to investment risk and return. If an asset's risk increase, the investor will expect to obtain more return and one of the main factors on asset's risk is liquidity. However, a share has less capacity of liquidity (ie, its illiquidity increases), it becomes less attractive unless the holder receive higher returns. [13] announced that the expected liquidity risk has a positive relation with expected excess returns. He claimed in his research that part of the excess return can be expressed by liquidity risk. Liquidity risk of stock and price difference between buy or sell impose additional transaction costs to investors, so the rate of demand return of stock will be increases. So in this research, the effective factors on spread will be analyzed due to special firm variables and market factors. And also, due to the importance of the relation between risk and return, the relation between liquidity risk and excess return of the firm will be investigated. We also sought to examine the relation between market liquidity of market and market excess returns. Therefore, in this study we sought to answer the following questions.

1-Does the liquidity risk cause a difference between proposed price of selling and buying of the stock?

2-Does the liquidity risk of market cause a difference between proposed price of selling and buying of the stock?

3-Background of the Research:

External Research:

Armensterng *et al* [14] indicated by investigating the effect of information asymmetry on the capital cost, in the case of asymmetric information, the proposed price between buy and sell will be different. This leads to this issue that information asymmetry has a direct relation with proposed price of buying and selling. Brown and Heljist indicated by investigating the effect of unexpected earning yield on information asymmetry. Since the reduction of information asymmetry cause an increase in stocks transactions. By investigating the effect of the corporate governance on reducing the information asymmetry, Kanagartam *et al* concluded that by reducing the information asymmetry, the stock liquidity increase. Warren bailet *et al* [33] investigating the economic consequence, indicated that by reducing the information asymmetry due to the increased financial reporting, the attracting of investors increase. Because they are more confident to the stock exchange than the fair prices. There is a factor than causes the transactions increase in the capital market and it is called the increase in market liquidity of market. Marcelo and Koviroos [25] investigated the market liquidity factor in the Spain's stock market between 1994 to 2002. They use the control factor of size and book-to market' value as a measure of illiquidity that is suggested by Amihod. Their results show that the liquidity risk factor should be considered as the main components of asset pricing. Metsay and Kara investigated the relation between information

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asymmetry, disclosure level and the liquidity of securities. They argued that the information asymmetry due to the low disclosure quality follows the false choice. The securities dealing with this problem and they have less liquidity. Therefore, the increase in liquidity is considered as the most important consequence of the information asymmetry reduction. Metosay *et al* by investigating the information asymmetry and liquidity of the securities in Tunisian firms concluded that there is a siginificant relation between the bid price and of the buying and selling the stocks and the information asymmetry and disclosure level. Easely and Ohera analyzed the information asymmetry as an effective factor on investment cost. Lambert, Loves and Verkchai in investigated the effect of asymmetric information on the stock cost in the perfect competition and imperfect competition level. They argued that in the level of complete competition, accurate data is an effective factor on information risk that can influence on the cost of capital. Amihood [3] stated that the expected market illiquidity has a positive correlation with the expected excess return on stocks. He has proven in his own research that some of the expected excess returns can be explained by mere illiquidity. Verchia by investigating the disclosure quality, argued that reducing the information asymmetry due to the improvement in disclosure quality and leads to the reducing of wrong choice and increasing the liquidity. Amihood and Mendelson [3] showed in their study that the liquidity of firm's securities will effect on the firm's cost of the capital. Reduction of the information asymmetry through the company's commitment to the timely and high quality disclosure reduces the loss investor's risk because it leads to increase in informed investors. Richardson measured a volume of information asymmetry and profit management by using the spread measure. His finding indicated that there is a systematic relation between information asymmetry and profit management, Due to his argument, on a high level of information asymmetry, mangers are more likely to manipulate profit. By using data from near stock, Stoll investigated the effective factors on spread. He stated in his argument that the volume of transactions determine the time that seller is exposed to the price risk. He found a significant and negative relation between transaction's volume and spread. Meknayesg and Webb found that there is a negative relation between business and spread by investigating the New York Stock. Their argument was that by more business activating, the spread reduced due to the cost- saving in business costs. Also, they found that there is a negative relation with cost gap between the number of transactions and number of stocks in transactions. Demenster investigate the relation between financial information and information asymmetry by using the range of price difference between buying and selling stocks. And he argued that the range of price difference between stocks' buying and selling has a significant and negative with the logarithm of the transaction's number and it has a positive and significant relation with any share's cost. Meknaywsh and Webb in their research showed that there is a negative relation between business and spread by investigating the New York stock exchange, their argument was that by increasing the activities in business, the spread decreases due to the saving in the business's cost. They found that there is a negative relation between the number of transactions and the number of stocks in transactions with spread.

Internal Research:

By investigating the management role in liquidity of listed companies in Tehran Stock Exchange, Rezapour and Farzani argued that the information asymmetry with incentives to manage profit result an increasing in transaction's cost and the willingness of uniformed traders decreased to exchange the firm's stock and so the liquidity of firm's stock is declining. And as a result, stock is traded with high liquidity risk. Ghaemi and shahriari [5] investigated the relation between corporate governance and financial performance. Their results indicate that the increase in information asymmetry between managers and firm's shareholders have a direct relation with reducing the number of investors and lowering the securities liquidity, reduction of the transaction's volume and in general, reduction of social benefits from these transactions.

4- Research method and data collection:

This research is an application method and in terms of collection method is descriptive and correlational. In fact, this study is a quantitative research that investigates and tests the hypothesis by analyzing the variables correlation. In this study, the method of data collection is done in two ways, field and library method. For the theoretical background, the valuable papers, journals are used and the process is done by using the archival method and by referring to the databases and investigating the required information on the web site of the Tehran Stock Exchange, Rahavard novin software and other valuable sites.

5- the Spatial and temporal range of study:

The statistical population of this study is all of the listed companies in Tehran Stock Exchange which are involved since the beginning of 1382 until 1390 in stock exchange. The selection criteria include the following; finally, 67 firms were selected based on these criteria.

1-they were accepted in Tehran Stock Exchange, during the years 1382 to the end of 1390.
2-for the comparison functionality, their fiscal year should end in 29 March.
3-their financial information should be available.

4-also it should not be a member of non-manufacturing firms such as insurance, banks, investment and holding companies.
5- they should have trading intervals a maximum of 6 months per year.

6- Hypotheses and research models:
In order to achieve the research objectives, the following hypothesis have been formulated.
First hypothesis: there is a negative relation between transaction's volume and information asymmetry.
Second hypothesis: there is a negative relation between the number of transactions and information asymmetry.
Third hypothesis: there is a positive relation between liquidity risk of firm and information asymmetry.
Forth Hypothesis: there is a negative relation between market liquidity and information asymmetry.
Fifth Hypothesis: there is positive relation between market liquidity risk and information asymmetry.
Sixth Hypothesis: there is a positive relation between firm liquidity risk and firm excess return.
Seventh Hypothesis: there is a positive relation between market liquidity risk and excess return of market.
Seeking to answer the research hypothesis, in the 1, 2, 3, 4, 5 hypothesis, we will profit from following pattern:

Model 1:
$BAS_{i,t}=b_0+b_1\ Volume_{i,t}+ b_2\ TRADES_{i,t} + b_3\ FRisk_t + b_4 M\ Liqui_t + b_5\ MRisk_t + b_6 SIZE_{i,t} + b_7\ PRICE_{i,t} + \epsilon_{i,t}$
B) in order to answering the hypothesis 6, we will use the following pattern:

Model 2:
$FER_t = b_0+b_1 F\ Liqui_t+b_2 FRisk_t+b_3 M\ Liqui_t+b_4\ MRisk_t+\epsilon_i$
c) the Hypothesis 7 will be tested by applying the following model:

Model 3:
$MER_t =b_0+b_1\ F\ Liqui_t+b_2\ FRisk_t+b_3 MLiqui_t+b_4 MRisk_t+\epsilon_i$

7 introducing the variables and the method for calculating them:
7-1 Dependent variables:

Basically in research work, variable determination is one of the most important stages of investigation. Variables can have different numerical values and in fact, it is a feature that researcher observes, controls or manipulate it. Variables are generally divided into two categories, independent variable and dependent and dependent variable (Azar and momeni). In this study, the dependent variables are information asymmetry, excess return of firm and excess return of market. The independent variables in this study include the transaction's volume, number of stock the firm's liquidity, the company's liquidity risk, market liquidity and market liquidity risk. Also the firm's stock price and the adjusted size of company are considered as control variables in this study.

1-information asymmetry is a qualitative concept and we can able to express it in terms of numbers and for this work, we use the spread. The standard method of calculation is done as follows:

$$SPREAD_{i,t} = \frac{AP - BP}{(AP + BP)/2}$$

t =the investigated time period
i = the investigated instance
SPREAD= the difference of the proposed cost domain of buying and selling of I firm in period t
AP (ASK PRICE)= the mean proposed price of selling the stock of i firm in peric t
BP (BID PRICE)=the main proposed price of buying the stock of I firm in period t.

2) Firm excess return $FER_{i,t}$: returns of each assets mean the ratio of price changes in one period to its price on the beginning of the period and the firm excess return is the difference between firms return with the ratio of return without risk.

$FER_{i,t} = R_{i,t} - R_{f,t}$: Difference between return ratio of the stock of firm I in the end of month I and return ratio without risk in same month
$R_{i,t}$: is calculated by the following method: $R_{i,t}= (P_1-P_0)/P_0$
$R_{i,t}$: Actual return of instance I in period t
P_1: the stock price in the end of period
P_0: the stock price in the beginning of the period
$R_{f,t}$: the return ratio without risk in a month is equaled to (0.014).

3) Market Excess return MER_t: this variable definition is very close to the definition of firm excess return, but there is a difference that the price fluctuations of the market portfolio are considered into account. the market portfolio mean a portfolio consisting of shares of markets stock. Here, the market excess return is the difference between market return with return rate without risk [13].

MER_t:=$R_{m,t}$ –$R_{f,t}$ the difference between the market excess return (portfolio) at the end of month t and the return ratio without risk in the same month

$R_{m,t}$ is calculated as follows:

$R_{m,t} = (TEDPIX_t - TEDPIX_{t-1})/(TEDPIX_{t-1})$

$R_{m,t}$ = the market return in period t

$TEDPIX_t$ = price return and dividends of stocks in period t

$TEDPIX_{t-1}$ = price return and dividends of stock in period t-1

2-7 Independent Variables:

1) Transactions volume:

$Volume_{i,t}$= the number of released stocks of firm I at any month divided by the total stock of firm I at the end of each month.

2)the number of stock transaction($TRADES_{i,t}$): Root of frequency transactions of firm I during each month.

3)Firm liquidity (F $Liqui_t$) : in this research, the inverse of spread has been used to measure the firm liquidity.

$F\ Liqui_t = 1/BAS$

4)firm liquidity risk ($Frisk_t$): For measuring the firm liquidity risk, the following relation is used:

$Frisk_t$ = （BAS -m(BAS)）/ SD (BAS)

where (BAS)denotes the average of the daily bid and ask for firm stock i in month t and m(BAS) and SD (BAS) are the mean and standard deviation of BAS, during the research period, respectively.

5) Market Liquidity (M $Liqui_t$): for measuring the market liquidity, the following relation has been used:

$MLiqui_t = \Sigma B_{i,t}/N$, where $MLiqui_t$ is the sensitivity of abnormal return to the transactions volume of firms divided by the number of transaction's day, in this equation the $\Sigma B_{i,t}$ Equal to the sum of $B_{i,t}$ firms in each month and N is the transaction's day in the same period. To measuring $B_{i,t}$ We use this (Regression model)

$$AR_{i,d,t} = \alpha_0 + B_0$$

$AR_{i,t}$: the abnormal return of stock I in the d day at month t (difference between the return ratio of stock I in day d at month t and the market return ratio during the same period) $AR_{i,d,t} = R_{i,d,t} - R_{m,d,t}$

AR<0 Sign=-1 AR=0 Sign=0 AR>0 Sign=1

$R_{i,d,t}$: is equal to stock return ratio I in the d day and month t $R_{i,d,t}=(P_1-P_0)-P_0$

$Volume_{i,d,t}$: the Rial value of traded stock in day d at month t divided by Rial value of released stock during the same period. To run the regression model, the basis of pattern data should be obtained. The matrix is arranged and during each month for firm in transaction's day should estimate the regression.

6) market liquidity risk ($Mrisk_t$) : To measure the market liquidity risk, the following equation should be used:

$Mrisk_t = (MLiqui_t - m(t\ MLiqui_t))/SD(t\ MLiqui_t)$

where M $Liqui_t$ is market liquidity in each month and m(M $Liqui_t$) and s (M $Liqui_t$) are the average and standard deviation of M $Liqui_t$ over the research period, respectively.

To make the results more generalizable, we should use the control variables, the control variables are:

1) price of stock ($PRISE_{i,t}$): Equals to the natural logarithm of stock price at the end of month t

2)frim size: $SIZE_{i,t}= L_n((MV_{i,t}) - M(Ln(MV_{m,t}))$, where $L_n(MV_{i,t})$: the firm's stock price multiplied by the number of stocks at the end of month, the natural logarithm of market value during the same period and $M(Ln(MV_{m,t}))$: the mean of natural logarithm of market value (portfolio) per month

8- the results of hypothesis testing and analyzing:

8-1 Descriptive Statistics:

To provide an overview of the main features of the measured variables in Table 1, some of these descriptive statistics are presented as follows such as mean, maximum, minimum, standard deviation and the number of observations.

According to the results shown in Table (1), the mean index of spread equals to -6.23 units. The mean variable of firm return equals to -0.0034 whereas the mean of market excess return is 0.0066 and standard deviation of market excess return is lower than firm excess return.

9) Testing the research hypothesis:

The present research hypothesis is collected by using the information from sample firms and it will be investigated by using multiple linear regression. And we will make decision based on the statistical principles and parameter's assumption. For the purpose of testing, the integration or panel Lymer F test is used.

H_0: Assuming the same intercept, integrated method

H_1: Assuming the different intercept, Panel method

According to Table (2), the F lymer computational statistic equals to 2. 66 and its significance level equals to 0.000 ($p<0.05$) and show the significance of panel method to the integrated method. In order to investigating

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the use of Random method and fixed effect method, the Hausman test is used by planning two following hypothesis.

H_0: Assuming incoherence of the individual effects, random effects method

H_1: Assuming the correlation between individual effects, the fixed effects method

According to Table 2, the results of Hausman test (the statistic with the amount of 168.51 with the zero significance level) and indicated the fixed effects versus the random effects. In general, to estimating the desired equation, the model of fixed effects panel data is accepted.

Table 1: The Descriptive statistics for research variables.

Variable	sign	Mean	maximum	Minimum	Standard deviation	The number of ibservations
Spread	BAS	-6.23	199.78	-199.53	48.16	7236
Transactions volume	Volume	0.0136	0.7311	0.00007	0.0361	7236
Number of transactions	TRADES	16.69	194.13	1	18.51	7236
Firm size	SIZE	-0.02	4.61	-26.88	1.63	7236
The stock price	PRICE	8.43	11.98	5.71	0.96	7236
Firm Excess Return	FER	-0.0034	0.47	-0.29	0.11	7236
Market Excess Return	MER	0.0066	0.27	-0.11	0.06	7236
Liquidity of the firm stock	Fliqui	1.6	2.01	-11.58	148.39	7236
Market liquidity	Mliqui	4.57	108.6	-30.66	14.65	7236
Firm liquidity risk	Frisk	1.77	17.15	-17.04	39.15	7236
Market Liquidity Risk	Mrisk	0.0002	7.1	-2.4	1	7236

Table 2: The related results to the used tests for the research model.

Test Type	Statistic	Probability	result
Lymer F	2.66	0.000	Panel method
Hausman	168.51	0.000	The performance of fixed effects

One of the most common statistical tests to identify the presence or absence of a multi colinearity problem is the use of VIF test. The decision criterion in this case is that if the VIF test value (the inverse of VIF) is less than 5 (less than 5%), there is no multi colinearity problem. The test results for this research are presented in Table (3). As shown in Table (3), a VIF statistic for all values is less than 5 and this value implies that in this research model, there is no multi colinearity problem.

Table 3: the results of VIF test for this research.

Variable	Sign	VIF	Tolerance
Transactions volume	volume	1.098	0.911
The number of transactions	TRADES	1.725	0.580
Firm size	SIZE	1.001	0.999
Stock price	PRICE	1.006	0.994
Firm's stock liquidity	Fliqui	1.986	0.504
Market liquidity	Mliqui	1.473	0.679

If the components of the model have auto correlation problem, it is necessary to fit the AR(1) variable, agin (dummy variable to remove the auto correlation between the error components). Therefore, to investigating the research model, the Panel method- fixed effects based on least square methods is used by adding the AR(1) variable. And their results are presented in Table (4).

The significance level of F fisher is lower than 1%. In addition, the adjusted determination coefficient for this model is 0.35 percent; this figure shows that 0.35 percent of variability can be determined by the descriptive variables and linear method. It should be noted that the amount of Watson statistic equals to 1.975 and this amount is between 1.5 and 2.5 and this shows that there is no auto correlation between components of models error.

1-9- the first hypothesis test:

The variable coefficient of negative transaction is significance at the 0,05 level. This means that by increasing the transactions volume, the spread is reducing and this result confirms the first hypothesis that there is a negative relation between transactions volume and information asymmetry.

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Table 4: the estimated result of research model.

$BAS_{i,t}=b_0+b_1\ Volume_{i,t}+b_2\ TRADES_{i,t}+b_3\ FRisk_t+b_4\ M\ Liqui_t+b_5\ MRisk_t+b_6\ SIZE_{i,t}+b_7\ PRICE_{i,t}+\epsilon_{i,t}$					
Variable	sign	coefficient	Standard error	t	Prob.
intercept	C	47.204	52.787	0.894	0.371
Transactions volume	VOL	-11.701	4.296	-2.718	0.007
The number of transactions	TRADE	-0.094	0.048	-1.969	0.049
Firm liquidity risk	FRISK	0.199	0.015	12.982	0.000
Market liquidity	MLIQ	-9.580	4.845	-1.977	0.047
Market liquidity risk	MRISK	140.114	69.180	2.028	0.043
Firm size	SIZE	3.693	1.217	3.036	0.002
Stock price	PRICE	-0.601	0.879	-0.684	0.494
The determination coefficient	0.358				
The adjusted determination coefficient	0.350		Watsen Statistic	1.975	
F statistic	48.166		F probability	0.000	

According to the results shown in table (4), the following results were concluded:

2-9- the second hypothesis test:

The variable coefficient of negative transaction is significance at the 0,05 level. This means that by increasing the number of transactions, the spread is reducing and this result confirms the second hypothesis that there is a negative relation between number of transactions and information asymmetry.

3-9-third Hypothesis test:

The variable coefficient of firm liquidity risk is significance at the 0,05 level. This means that by increasing the firm liquidity risk, the spread is reducing and this result confirms the third hypothesis that there is a negative relation between firm liquidity risk and information asymmetry.

4-9Forth hypothesis test:

The variable coefficient of market liquidity is significance at the 0,05 level. This means that by increasing the market liquidity, the spread is reducing and this result confirms the forth hypothesis that there is a negative relation between market liquidity and information asymmetry.

5-9 Fifth hypothesis test:

The variable coefficient of market liquidity risk is significance at the 0,05 level. This means that by increasing the market liquidity risk, the spread is reducing and this result confirms the fifth hypothesis that there is a negative relation between market liquidity risk and information asymmetry.

6-9 Sixth hypothesis test:

in this hypothesis, we investigated that whether there is a positive relation between market excess return and firm liquidity risk. According to table (5), the F Lymer statistic equals to 0.796 and its significance level equlas to 0.822 (P>0.05). in other words, the calculated F lymer indicates the acceptance of Null hypothesis (the performance of integrated method).

Table 5: the related results to the tests in this research.

Test type	Statistic of test	Probability	result
F Lymer	0 .796	0.882	Integrated method
Huasman			

The significance level of F fisher is lower than 5%. In addition, the adjusted determination coefficient for this model is 0.1 percent; this figure shows that 0.1 percent of variability can be determined by the descriptive variables and linear method. It should be noted that the amount of Watson statistic equals to 1.958 and this amount is between 1.5 and 2.5 and this shows that there is no auto correlation between components of models error.Since, none of them has a significant coefficient, we can say that the sixth hypothesis is not confirmed, it means that there is no significant an positive relation between firm excess return and firm liquidity risk.

7-9 seventh Hypothesis test:

In this hypothesis, it is investigated whether is there a positive relation between market excess return and market liquidity risk. According to the table (7), the F Lymer statistic equals to 0.023 and its significant level is 1. In other words, the calculated F Lymer is shown that the Null hypothesis is accepted (the performance of adjusted method).

The significance level of F fisher is lower than %5. In addition, the adjusted determination coefficient of this model is 2.2 percent; this figure shows that% 2.2 of the variability can be determined by the explanatory variables. It should be noted that the amount of Watson statistic equals to 1.86 and this amount is between 1.5

and 2.5 and this shows that there is no auto- correlation between the components of model's error. Considering that none of the coefficients are significant, we can say that the seventh hypothesis is not confirmed. It means that there is no positive and significant relation between markets returns and market liquidity risk.

Table 6: the estimated results of research method.

So the integrated model is fitting as follows: $FER_t = b_0+b_1F\ Liqui_t+b_2Frisk_t+b_3M\ Liqui_t+b_4\ Mrisk_t+\epsilon$					
Variable	sign	Coefficient	Standard error	t	Prob.
Intercept	C	0.090	0.158	0.571	0.568
Firm liquidity	Fliqui	0.00001	0.00001	0.633	0.527
Firm liquidity risk	FRISK	-0.00007	0.00004	-1.559	0.119
Market liquidity	MLIQ	-0.020	0.035	-0.591	0.554
Market liquidity risk	MRISK	0.303	0.506	0.599	0.549
Determination coefficient	0.0016				
Adjusted determination coefficient	0.00106		Watson statistic	1.958	
F statistic	2.7		F probability	0.028	

According to the results shown in table (6), the following results were concluded:

Table 7: the related results to the tests in this research

Test type	Statistic of test	Probability	result
F Lymer	0.023	1	Integrated method
Huasman			

So, the integrated model is fitted as follows.

Table 8: The estimated results of research method.

$MER_t = b_0+b_1F\ Liqui_t+b_2FRisk_t+b_3M\ Liqui_t+b_4\ MRisk_t+\epsilon_i$					
Variable	sign	Coefficient	Standard error	t	Prob.
interceot	C	0.005	0.066	0.076	0.940
Firm liquidity	Fliqui	0.0000004	0.000004	0.104	0.917
Firm liquidity risk	FRISK	-0.00001	0.00002	-0.542	0.588
Market liquidity	MLIQ	-0.0004	0.014	-0.028	0.978
Market liquidity risk	MRISK	0.013	0.212	0.059	0.953
Determination coefficient	0/0224				
Adjusted determination coefficient	0/0223		Watson Statistic	1/86	
F statistic	2/04		F probability	0/036	

According to the results shown in table (8), the following results were concluded:

10- Conclusion and the results interpretation:

In the 1 to 5 hypothesis, the relation between the transactions volume, the number of transactions, firm liquidity risk, market liquidity and market liquidity risk with the information asymmetry were estimated by using model 1. In this regard, first the gathered information of sample firms was conducted by using the multiple linear regression analysis. And based on the statistical rules, the Panel method was used for F Lymer test and Hausman test. According to the results, the significance level of F Fisher is less than 1 percent, so this model with a 99 percent probability was significant. In other words, this model had a great reputation. In addition, its adjusted determination coefficient is 35 percent. These figure shows that 35 percent of variability can be linearly explained by the explanatory variables. It should be noted that the amount of Watson statistic equals to 1.975 and this amount is between 1.5 and 2.5 and this shows that there is no auto correlation between the models component. The variable coefficient of transactions volume, the number of transactions and the market liquidity was significant in the 0,05 level. And this issue confirmthe first, second and forth hypothesis and it means that by increasing the transactions volume, the number of transactions and market liquidity decreases. And finally, it was concluded that; there is a negative relation between the transactions volume, the number of transactions and market liquidity with the information asymmetry.

Also the coefficient of firm liquidity risk and market liquidity risk is positive and significant in the level of 0.05, it means that by increasing the liquidity risk of market and firm, the spread increases and this result confirms the third and fifth hypothesis that there is a positive relation between firm liquidity risk and market liquidity risk. These results with the results of Brown and Heljist [15] indicated that there is a positive relation between the transactions volume and information asymmetry. Meknayesh and Webb indicated in their research by investigating the New York Stock check that there is a negative relation between business activities and spread. They argued that by increasing the business activities, the amount of spreads decrease due to the saving in business costs. They found that there is a negative relation between the number of transactions and the number of stocks in transactions. [5] showed that the increasing of information asymmetry between firm's managers and shareholders has a direct relation with reduction of the number of investors and reduction of stock liquidity and transactions volume and in general, reduced social benefits from these transactions. In the sixth hypothesis, the positive relation between firm excess return and firm liquidity risk were estimated by model 2

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and in seventh hypothesis, the positive relation between market excess return and market liquidity risk were investigated by using model 3. In models 2 and 3 and according to the statistics, the F Lymer amount is 0.796 and 0.l023 and their significance level are 0.822 and 1 (P>0.05). in other words, the calculated F Lymer indicated that the Null Hypothesis is accepted (the performance of integrated method). According to this issue, that none of them are significant, it was concluded that the seventh and sixth hypothesis are not confirmed. It means that there is no positive and significant relation between firm excess return and firm liquidity risk also there is no significant relation between market excess return and market liquidity risk. These results do not match with the results of Amihood [13] that he stated that part of expected excess return can be considered as the illiquidity.

Table 9: summarized the statistical results of the research hypothesis.

Hypothesis	Dependent variable	Model	Coefficient	Standard error	T statistic	R^2	F statistic	Watson	The hypothesis results
1	volume	1	-11.701	4.296	-2.718	0.350	48.16	1.975	Confirmed
2	TRADES	1	-0.094	0.048	-1.969				Confirmed
3	FRISK	1	0.199	0.015	12.982				confirmed
4	MLIQ	1	-9.580	4.845	-1.977				confirmed
5	MRISK	1	140.11	69.180	2.028				confirmed
6	FRISK	2	-0.00007	0.00004	-1.559	0.001	2.7	1.95	rejected
7	MRISK	3	0.013	0.059	0.212	0/0223	2/04	1/86	rejected

11- the Limitations of the study:

1-the people's expectations of the stock market is heterogeneous and this heterogeneity can be a factor for different decisions. Therefore the absence of information asymmetry in the stock market cannot be considered the only factor in decision making.

2- the individual's ability in information processing is different. As a result, there is a probability that by entering the same information to the stock market, we have different perceptions by investors. In other words, different decisions due to the entering the different information, is because the individual's ability in processing information is different and it does not relate to the information asymmetry.

12-Suggestions from results:

Information asymmetry is one of the most important factors affecting on the spread. In this research, the purpose was the predicting the strategies to reduce the information asymmetry by investigating the effective factors on information asymmetry. So, it is proposed that by increasing the transactions volume, the number of transactions, liquidity and reduction of liquidity risk and other factors, some strategies should be done to reduce the information asymmetry in stock's market, since by reduction of the information asymmetry, the spread decreases. And the investment opportunities will also increase.

13- Suggestions for future Research:

1-the hypothesis test of this research should be done in long periods and also in different industries in Tehran Stock Exchange.

2-two measures category of information asymmetry can be identified: A)Market-based measures, including the price difference between buying and selling stocks and wrong choice; B)Accounting- based measures including the research and development cost to selling and accruals quality. In this study, the difference domain of proposed price of stock selling and buying are used to measure the information asymmetry. In other studies, other criteria such as accruals quality are used to measure the information asymmetry.

3- also in other studies, it is suggested that to measuring the relation between liquidity risk and stock return excess, the Fama and French three factor model is used.

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