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THE RELATIONSHIP BETWEEN FIRM STOCK RETURNS AND PRESENCE OF INSTITUTIONAL STOCKHOLDERS WITH STOCK LIQUIDITY

Mohamad MADANI [1*], Elnaz TAJVIDI [2], Hassan FARAGZADEH DEHKORDI [3]

[1] M.A.in Accounting, university of Economic sciences, Iran
[2] Assistant Professor accounting at shahid Beheshti university, Iran
[3] Assistant Professor accounting at university of Economic sciences, Iran

*Corresponding Author:

ABSTRACT

The ownership structure of a firm in terms of the presence of legal and real stockholders affects the price behavior, liquidity, and firm's volume of stock exchange. Institutional investors including investment firms and other commercial companies greatly affect companies and have access to a great deal of information about their prospects, plans, and even potential contracts due to owning a majority of their stocks. The purpose of this study is to investigate the relationship between the firm's stock returns and presence of stockholders with stock liquidity in 2007-2011. In more detail, this applied-correlational research studies the relationship among managers' ability, firm size, institutional stockholders, and fluctuation in stock returns on the one hand, and stock liquidity on the other. The results manifested that the presence of institutional stockholders and fluctuation in stock returns have a significant relationship with stock liquidity of firms listed on the Tehran Stock Exchange.

Keywords: *Managers' Ability, Institutional Ownership, Fluctuation in Stock Return, Stock Liquidity*

INTRODUCTION

All business units operate with the aim of achieving the maximum possible profit. Earnings management creates information asymmetry (Ghoss and Olson, 2009). When information asymmetry about a firm's stock increases, its intrinsic value will differ from the investors' supposed value in the capital market. As a result, the real value of firm stocks will differ from the value expected by stockholders (Ghoss and Olson, 2009).

An economic consequence of information opacity is that it may affect investors' willingness to buy a firm stock (Ghosh and Olson, 2009). Thus, the information asymmetry resulting from profit management affects the liquidity and consequently increases the cost of the firm's capital due to liquidity risk (Lamber et al., 2007).

The ownership structure of a firm in terms of the presence of legal and real stockholders affects the price behavior, liquidity, and firm's volume of stock exchange. Institutional investors, including investment firms and other commercial companies, greatly affect companies and have access to a great deal of information about their prospects, plans, and even potential contracts due to owning a majority of stocks.

Institutional investors can both have significant influence over the firm management, and align the management interests with that of the stockholders' group.

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Theoretical Foundations

Fluctuation of stock returns

The fluctuation of stock returns is one of the most controversial financial issues considered by capital market researchers in emerging markets in recent years since fluctuations of prices and returns affect the performance of the financial sector and especially, the stock liquidity. Another reason for studying stock fluctuation is that investors consider it as a measure of risk, while, capital market policymakers can use it as a tool to measure stock market vulnerabilities.
Jacoby and Zheng (2010) found that companies with higher returns fluctuations for trading in the market, incur higher transaction costs, which indicates lower stock liquidity.

Liquidity

Black and Milgrom (1985) provides a comprehensive definition of liquidity and identifies its three main dimensions: 1) Strength: The cost of buying and selling a contract immediately (or the difference between suggested prices of buying and selling), 2) market depth: number of contracts required for price changes, and 3) flexibility: the time required for the price to return to equilibrium after random shocks (Black and Milgrom, 1985).
Although this is a comprehensive definition, its multidimensionality prevents its easy practical use. Market participants need to be aware of liquidity since it provides them with a basis for estimating potential transaction costs.
Regarding Kell's perspective on liquidity "flexibility", Angel (1997) argue that this criterion clearly requires estimating the equilibrium price estimation, which is challenging due to the constant flow of new information.
Gauss (2008) believes that flexibility as another dimension of market liquidity is actually related to time, because it is effective in determining the optimal time to submit new orders following a large transaction.

Research Background

Abdolmehdi Ansari et al., (2014) grouped companies to examine the effect of earnings management on the ability to predict profit components. They showed that, contrary to appearances, profit management due to the inability of managers does not always reduce predictive power and can sometimes increase it.
Ahmadpour and Montazeri (2012) studied impressions of the firm size, governance, and ownership structure on managers' tendency to choose the type of earnings management (efficient or opportunistic earnings management). They reported that efficient earnings management was selected more, while the firm size and family ownership were the most important factors affecting the chosen type.
By examining the effect of disclosure quality on stock liquidity and capital cost of firms listed on the Tehran Stock Exchange, Setayesh et al., (2011) found a positive significant relationship between the firm size and its current and future stock liquidity. However, disclosure quality and stock liquidity were not significantly correlated.
The study of Izadinia and Rassaian (2010) on the effect of ownership dispersion on the stock liquidity of 156 firms listed on the Tehran Stock Exchange in 2002-2008 revealed no significant link between these two factors.

Moradzadeh Fard et al. (2010) pointed to the significant negative impact of accrual management on the stock liquidity in companies listed on the Tehran Stock Exchange.
Rahmani, Hosseini, and Rezapour (2010) examined the association between institutional ownership and stock liquidity. They found a positive significant association between the level of institutional ownership and stock liquidity, and reported that concentration of institutional ownership reduced the stock liquidity.
Haun (2014) examined Chinese capital market companies and measured management ability using data envelopment analysis (DEA) and the regression model. He concluded that inefficient managers made a profit with the help of optional management accruals. He also showed that the quality of firms' profits was significantly related to their managers' abilities.
Vithessonthi and Tongurai (2013) analyzed the bond between a firm size and operating leverage. The finding indicated that although this bond was significant in medium-sized firms, it did not apply to large and very large firms.
Maschec (2012) examined the effect of managers' performance in centralized versus decentralized organizations. The results revealed that in centralized organizations, managers had more control over available resources and their activities were more effective.
Antoshin (2011) found a non-linear relation between investment and environmental uncertainty. He also recognized several factors affecting this relation, including the firm size and managers' ability.

METHODOLOGY

This is an applied descriptive-correlational study. The statistical population consisted of 264 firms listed on the Tehran Stock Exchange. Among these, 81 firms were selected to form the sample, and their states were analyzed from 2007 to 2011. The required information was collected by the following methods.
Library method: This method was used to collect information from the research background. Therefore, by studying books and articles and searching Internet sites, the required information was collected.
Documentary method: The information was collected through "Tadbir Pardaz" and "Rah Avard Novin" software and the website of "Management of Research, Development and Islamic Studies of the Stock Exchange Organization".
The data was analyzed using various methods of quantitative statistical analysis, including univariate and multiple regression analysis, as well as Eviews 6 and Excel software.

Research Hypotheses

H_1: There is a relationship between the presence of institutional stockholders in the capital structure and stock liquidity.
H_2: There is a relationship between fluctuation in stock returns and stock liquidity.
H_3: The relationship between managers' ability and stock liquidity varies according to the presence of institutional stockholders and fluctuations in stock returns.

The main research models

To test H_1, the regression model presented in Equation (1) is used. This model is:

Equation (1)

$$AMIH_{i,t} = \alpha_1 + \beta_1 INS_{i,t} + \beta_2 BI_{i,t} + \beta_3 NS_{i,t} + \beta_4 P_{i,t} + \beta_5 TS_{i,t} + \varepsilon_{i,t}$$

To test H_2, the regression model presented in Equation (2) is used. This model is:

Equation (2)

$$AMIH_{i,t} = \alpha_1 + \beta_1 RV_{i,t} + \beta_2 BI_{i,t} + \beta_3 NS_{i,t} + \beta_4 P_{i,t} + \beta_5 TS_{i,t} + \varepsilon_{i,t}$$

To test H_3, the regression model presented in Equation (3) is used. This model is:

Equation (3)

$$AMIH_{i,t} = \alpha_1 + \beta_1 Mangablty_{i,t} + \beta_3 INS_{i,t} + \beta_4 RV_{i,t} + \beta_6 Mangablty_{i,t} * INS_{i,t} + \beta_7 Mangablty_{i,t} * RV_{i,t} + +\beta_{10} INS_{i,t} * RV_{i,t} + +\beta_{13} Mangablty_{i,t} * INS_{i,t} * RV_{i,t} + + + \varepsilon_{i,t}$$

Research Findings

Descriptive statistics of the correlation matrix

Table (1) provides an overview of the data, including the number, mean, median, minimum, maximum, and standard deviation of the study variables.

Table 1-Descriptive statistics of research data

Variable	Amioud liquidity criteria	Manager's ability criterion	Firm size	Institutional stockholders (%)	Fluctuation in stock returns	Block stockholders (%)	Number of the firm's stockholders	Average daily stock trading volume (Rials)	Average annual stock price
Symbol	AMIH	MNG	SIZE	INS	RV	BI	NS	TS	P
Mean	0.851465	0.000000	19.941350	0.611969	2.842907	0.707509	8.074405	5.544406	8.108296
Median	0.019000	0.017441	19.924760	0.625000	2.029692	0.749550	8.027477	5.471879	8.085481
Maximum	69.902400	3.631620	24.113790	0.968600	33.802170	1.000000	11.819360	11.413560	10.152760

Minimum	0.000000	-0.775830	16.350790	0.088600	0.041231	0.088600	5.198497	1.298555	5.385004
SD	4.669354	0.406126	1.380848	0.189382	3.176252	0.185714	1.334271	1.680758	0.857347

The correlation matrix was calculated by the Spearman method. The results are presented in Table 2.

Table 2- Correlation matrix between the variables

Variable-Symbol		AMIH	MGAB	INS	RV	B1	BM	P	TS
AMIH	Significance level	----							
	Coefficient	1.00000							
MGAB	Significance level	0.92560	----						
	Coefficient	0.00460	1.00000						
INS	Significance level	0.50780	0.22190	----					
	Coefficient	0.03300*	0.06100	1.00000					
RV	Significance level	0.13600	0.37670	0.10520	----				
	Coefficient	0.07460	0.04400*	0.08100*	1.00000				
B1	Significance level	0.38890	*0.0144	**0.000	0.41600	---			
	Coefficient	0.04300*	0.12220	0.82410	0.04000*	1.00000			
BM	Significance level	0.55720	**0.000	0.47130	0.10620	**0.000	----		
	Coefficient	0.02900*	0.26800*	0.04400*	0.08000*	0.20900*	1.00000		
P	Significance level	0.15770	0.24930	0.90370	0.64480	*0.0426	**0.000	----	
	Coefficient	0.07000*	0.05770	0.00600	0.02310	0.10090	0.27600*	1.00000	
TS	Significance level	**0.000	0.92630	0.20270	0.57240	**0.0005	**0.000	0.39610	----
	Coefficient	0.21500*	0.00400*	0.06300*	0.02800*	0.17300*	0.47970	0.04250	1.00000
** Significant at 0.01%									
* Significant at 0.05%									

The variables with a significant correlation and their correlation coefficients are presented in Table 2. The closer this coefficient to 1, the greater the degree of correlation between the two variables.

Results of models estimations

The estimation results of the three above mentioned models using the data of sample firms in 2007-2011 are presented in the following tables, respectively.

Table 3- Results of the model estimation in equation (1)

$AMIH_{i,t} = \alpha_1 + \beta_1 INS_{i,t} + \beta_2 BI_{i,t} + \beta_3 NS_{i,t} + \beta_4 P_{i,t} + \beta_5 TS_{i,t} + \varepsilon_{i,t}$				
Variable	Coefficient	SD	t	Significance level
$INS_{i,t}$	1.692312	1.258873	2.110476	0.0000
$BI_{i,t}$	1.464541	1.266569	1.156306	0.2483
$NS_{i,t}$	-0.394753	0.204495	-1.930380	0.0543
$P_{i,t}$	-0.664680	0.287475	-2.312135	0.0213
$TS_{i,t}$	0.357202	0.157781	2.263916	0.0241
8.335981	F		0.295666	Determination coefficient (R^2)
0.000000	Significance level of F		0.224190	R^2 justified coefficient
2.278405	Durbin-Watson test			

Given "F" in Table 3 ($p = 0.000$) and error level $\alpha = 0.05$, H_0 hypothesis is rejected and the opposite hypothesis is accepted ($0.05 > 0.000$); This means that the model is significant, and at least, one of the coefficients is opposite to zero.

Also, the estimated determination coefficient for the regression model of Equation (1) is $R^2 = 0.295666$, showing that nearly 30% of the behavior of the dependent variable is explained by independent and control variables. The result of Durbin-Watson test (2.278405) denies any self-correlations among the variables.

Table 4- Results of the model estimation in equation (2)

$AMIH_{i,t} = \alpha_1 + \beta_1 RV_{i,t} + \beta_2 BI_{i,t} + \beta_3 NS_{i,t} + \beta_4 P_{i,t} + \beta_5 TS_{i,t} + \varepsilon_{i,t}$				
Variable	Coefficient	SD	t	Significance level
$RV_{i,t}$	0.013416	0.003789	3.541096	0.0005
$BI_{i,t}$	-0.060561	0.021267	-2.847568	0.0047
$NS_{i,t}$	-0.051010	0.088266	-0.577919	0.5637
$P_{i,t}$	-0.029630	0.019117	-1.549966	0.1222
$TS_{i,t}$	-0.035785	0.008694	-4.115879	0.0000
1.921770	F		0.338831	Determination coefficient (R^2)
0.000030	Significance level of F		0.162519	R^2 justified coefficient
2.103192	Durbin-Watson test			

Given "F" in Table 4 ($p = 0.000030$) and error level $\alpha = 0.05$, H_0 hypothesis is rejected and the opposite hypothesis is accepted ($0.05 > 0.000030$); This means that the model is significant, and at least, one of the coefficients is opposite to zero.

Also, the estimated determination coefficient for the regression model of Equation (2) is $R^2 = 0.338831$, showing that nearly 34% of the behavior of the dependent variable is explained by independent and control variables. The result of Durbin-Watson test (2.103192) denies any self-correlations among the variables.

Table 5- Results of the model estimation in equation (3)

$$AMIH_{i,t} = \alpha_1 + \beta_1 Mangablty_{i,t} + \beta_3 INS_{i,t} + \beta_4 RV_{i,t} + \beta_6 Mangablty_{i,t} * INS_{i,t} + \beta_7 Mangablty_{i,t} * RV_{i,t} + +\beta_{10} INS_{i,t} * RV_{i,t} + +\beta_{13} Mangablty_{i,t} * INS_{i,t} * RV_{i,t} + + + \varepsilon_{i,t}$$

Variable	Coefficient	SD	t	Significance level
$Mangablty_{i,t}$	-73061.50	48072.46	-1.519820	0.1294
$INS_{i,t}$	-789.2521	185.4126	-4.256734	0.0000
$RV_{i,t}$	-9741.091	3445.902	-2.826862	0.0049
$Mangablty_{i,t} * INS_{i,t}$	1228.242	624.9675	1.965290	0.0501
$Mangablty_{i,t} * RV_{i,t}$	21042.74	13038.51	1.613892	0.1074
$INS_{i,t} * RV_{i,t}$	187.5077	47.30908	3.963462	0.0001
$Mangablty_{i,t} * INS_{i,t} * RV_{i,t}$	-369.3153	164.8359	-2.240503	0.0256
$size_{i,t} * INS_{i,t} * RV_{i,t}$	-9.582190	2.404806	-3.984600	0.0001
$BI_{i,t}$	615.0078	3615.533	0.170102	0.8650
$NS_{i,t}$	208.5606	128.0067	1.629295	0.1041
$P_{i,t}$	-151.4975	168.1479	-0.900978	0.3682
$TS_{i,t}$	645.1968	105.8338	6.096320	0.0000

16.02317	F	0.444802	Determination coefficient (R^2)
0.0000	Significance level of F	0.417042	R^2 justified coefficient
1.836942	Durbin-Watson test		

Given "F" in Table 5 ($p = 0.00000$) and error level $\alpha = 0.05$, H_0 hypothesis is rejected and the opposite hypothesis is accepted ($0.05 > 0.00000$); This means that the model is significant, and at least, one of the coefficients is opposite to zero.

Also, the estimated determination coefficient for the regression model of Equation (3) is R^2=0.444802, showing that nearly 45% of the behavior of the dependent variable is explained by independent and control variables. The result of Durbin-Watson test (1.836942) denies any self-correlations among the variables.

Results of Testing The Study Hypotheses

Testing H_1

There is relationship between the presence of institutional stockholders in the capital structure and the firm's stock liquidity. The purpose of this hypothesis is to prove whether institutional stockholders and stock liquidity of firms listed on the Tehran Stock Exchange are significantly correlated.

This hypothesis was tested through regression equation (1). In testing the third hypothesis, the coefficient of institutional stockholders ($INS_{i,t}$) in equation (1) should be significant. If the coefficient β_1 in the above equation is significant at the 95% confidence level, the independent and dependent variable are significantly related, and the information content of the institutional stockholder variable, and the information load of this variable to explain the stock liquidity are also confirmed. On the other hand, the coefficient β_1 is significant and opposite of zero indicates the confirmation of the H_1.

Finally, the results of testing this hypothesis, presented in Table 3 at the error level of 5%, show a significant relationship between institutional stockholders and stock liquidity of firms listed on

the Tehran Stock Exchange; in fact, F value for $INS_{i,t}$ is 0.00475, which is significant at the 95% confidence level. Therefore, H_1 is verified.

Also, given Table 3, at the 95% confidence level, the two control variables of percentage of firm's block stockholders percentage ($BI_{i,t}$) and the number of firm's stockholders ($NS_{i,t}$) have no significant relationship with stock liquidity, and their relationship with stock liquidity dependent variable is not accepted. However, a significant relationship between the average annual stock price ($P_{i,t}$) and the average daily stock trading volume (Rials) ($TS_{i,t}$) with the stock liquidity, at the same level of confidence is confirmed.

Testing H_2

There is a relationship between the fluctuation in stock returns and stock liquidity. The purpose of this hypothesis is to prove whether the fluctuation in stock returns is and stock liquidity of firms listed on the Tehran Stock Exchange are significantly correlated.

This hypothesis was tested through regression equation (2). In testing the forth hypothesis, the coefficient of fluctuation in stock returns ($RV_{i,t}$) in equation (2) should be significant. If the coefficient β_1 in the above equation is significant at the 95% confidence level, the independent dependent variables are significantly related, and the information content of the fluctuation in stock returns variable, and the information load of this variable to explain the stock liquidity are also confirmed.

Finally, the results of testing this hypothesis, presented in Table 4 at the error level of 5%, show a significant relationship between fluctuation in stock returns and stock liquidity of firms listed on the Tehran Stock Exchange; in fact, F value for $INS_{i,t}$ is 0.0000, which is significant at the 95% confidence level. Therefore, H_2 is verified.

Also, given Table 4, at the 95% confidence level, the two control variables of the number of firm's stockholders ($BI_{i,t}$) and the average annual stock price ($P_{i,t}$) have no significant relationship with stock liquidity, and their relationship with stock liquidity dependent variable is not accepted. However, a significant relationship between the percentage of firm's block stockholders ($BI_{i,t}$) and the average daily stock trading volume (Rials) ($TS_{i,t}$) with the stock liquidity, at the same level of confidence is confirmed.

Testing H_3

The relationship between managers' ability and stock liquidity varies according to the presence of institutional stockholders and fluctuations in stock returns. The purpose of this hypothesis is to prove whether the presence of institutional stockholders and fluctuation in stock returns affect the relationship between the manager's ability of stock liquidity of firms listed on the Tehran Stock Exchange.

This hypothesis was tested through regression equation (3). In testing the fifth hypothesis, the coefficient of $Mangablty_{i,t} * INS_{i,t} * RV_{i,t}$ in equation (3) should be significant. If the coefficient β_{15} in the above equation is significant at the 95% confidence level, the independent and dependent variables are significantly related, and the information content of the fluctuation in stock returns variable, and the information load of this variable to explain the stock liquidity are also confirmed.

Finally, the results of testing this hypothesis, presented in Table 5 at the error level of 5%, show a non-significant relationship between the independent variable and stock liquidity of firms listed on the Tehran Stock Exchange; in fact, F value for $\text{Mangablty}_{i,t} * \text{size}_{i,t} * \text{INS}_{i,t} * \text{RV}_{i,t}$ is 0.0171, which is significant at the 95% confidence level. Therefore, H_3 is verified.
Table 6 summarizes the results of hypothesis tests.

Table 6- Results of hypothesis tests

Hypothesis	Description	Result
H_1	There is a relationship between the presence of institutional stockholders in the capital structure and firm's stock liquidity.	Verified
H_2	There is a relationship between the fluctuation in stock returns and stock liquidity.	Verified
H_3	The relationship between managers' ability and stock liquidity varies according to the presence of institutional stockholders and fluctuation in stock returns.	Verified

DISCUSSION AND CONCLUSION

The first hypothesis - There is relationship between the presence of institutional stockholders in the capital structure and the firm's stock liquidity - aims to find the effect of the institutional stockholders on stock liquidity.
The results of testing the first hypothesis manifests a significant relationship between the presence of institutional stockholders in the capital structure and stock liquidity of firms listed on the Tehran Stock Exchange in 2007-2011. This finding is supported by the theoretical base of the hypothesis, since it is always thought that the presence of institutional stockholders in a firm leads to information asymmetry, which is one of the most important factors affecting the stock liquidity. This correlation was confirmed in the studies of Haflin and Galai (2000) and Jacoby and Zheng (2010) but not in those of Kenny and Maine (1995), Bulletin and Van Tuden. This incompatibility can be attributed to several factors including differences in the economic environment, information environment and, the temporal and spatial realm of research.
The second hypothesis - There is a relationship between the fluctuation in stock returns and stock liquidity – is accepted. It confirms that in 2007-2011, the fluctuation in stock returns could explain stock liquidity in the studied firms. The calculated coefficient was 0.0124, meaning that for a unit increase (decrease) in stock return fluctuation, the firm's stock liquidity increased (decreased) about 1%.
Results of this hypothesis, which are also confirmed by Jacoby and Zheng (2010), seem reasonable because increasing stock return turbulence will lead to increased stock risk. Regarding the relationship between stock return and risk, it is expected that as risk increases, the expected return on stocks will increase; so, both the stock desirability and liquidity will progress.
On the other hand, according to the studies of Jacoby and Zhang (2010) and Haflin and Galai (2000), the effects of firm size and capital structure on stock liquidity was confirmed. Given these findings and the reports of Demerjian et al., (2013), in the third hypothesis of the present study, we sought to find whether the relationship between managers' ability and stock liquidity

will vary in terms of factors like the presence of institutional stockholders capital structure and fluctuation in stock returns.

We found that these two variables had affected the relationship between managers 'ability and the firm's stock liquidity in 2007-2011. In other words, it was revealed that the effect of managers 'ability on the firm's stock liquidity varies in terms of the presence of institutional stockholders and fluctuation in stock returns.

Since there are no foreign and domestic researches regarding the third hypothesis, comparing its results is not possible.

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