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Investigation and Explanation of the Relationship between Ownership Structure and Stocks Liquidity of Companies Accepted in Tehran Stock Exchange

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ABSTRACT

Background: According to the efficient market theory, one of the features of an efficient and ideal market is the lack of trading costs and high liquidity. Regarding to the importance of liquidity, recognition of the factors affecting it can help us improve it. **Objective:** goal of this research is to study the relationship between ownership structure and stocks liquidity of the companies accepted in Tehran stock exchange, thus the effect of ownership structure on stocks liquidity is investigated both from ownership type and ownership concentration views. **Results and conclusion:** A sample comprised of 74 companies which were members of Tehran stocks exchange in a 5 year period (2005-2009) is selected. Linear regression model with confidence level of 95% and software Excel and SPSS were used to test the assumption and study of relationship between Ownership Structure (independent variable) and liquidity of the stocks (dependent variable). The results show that institutional ownership level, managerial ownership level and ownership concentration level have a reverse (negative) relationship with stocks liquidity and also there is a direct (positive) relationship between corporative ownership level and stocks liquidity.

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INTRODUCTION

One of the main subjects of investment is liquidity of assets. Liquidity plays an important role in evaluation of assets, because investors notice if there is a suitable market to sell their assets or no. Liquidity capability of a stock certificate means of its rapid sale. Whatever a stock can be sold faster and with lower cost, its liquidity is higher. Securities that are daily and frequently transacted have more liquidation level and less risk (Rezapour, 2010).

The less the liquidation level, the less the attraction of that stock for investment. Liquidation is a function of rapid transaction of a high volume of securities with low cost. This means asset price would not significantly change from order time to purchase time. Liquidity degree of an investment is low when we cannot obtain its fair price rapidly (Rezapour, 2010). Liquidity level is also effective in decision-making of investors to form an investment portfolio. In other words, logical investors claim more risk for stocks with lower liquidity, and their expected return is more (Izadinia & Rasaeian, 2010).

Rather than theoretical aspects, and regarding to the available realities such as queue phenomena of buy and sell and other problems, notice to liquidity and effort to solve this problems is empirically necessary. Increment of liquidity can allot financial risk by decrement of revolving funds and create more motivation for investors. Studies show that trading costs were economically important in USA markets (Izadinia & Rasaeian, 2010).

Regarding to the role of liquidity in discovery of assets, distribution of financial risk, and decrement of financial costs, recognition of its effective factors are very important. In this research, we study relationship between Corporative ownership and liquidity of stocks.

2- Research literature:

Cueto (2009), in a paper titled "Market Liquidity and ownership structure in markets that weakly support tockholders, evidences from Brazil and Chile", concluded that great stockholders cause decrement of accessibility to float stock in market and so decrement of liquidity.

Agarwal(2008), in a paper titled "Institutional ownership and stock liquidity", studie the relationship between institutional ownership and stock liquidity from two views of incorrect selection and efficiency. He concluded that there was a nonlinear relationship between institutional ownership and liquidity of stocks.

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Rubin (2007), in a paper titled "Ownership level, ownership concentration, and liquidity", studied relationship of institutional ownership and other intra-company groups with liquidity. The results showed that he couldn't observe relation between ownership of intra-company groups and liquidity, but he found that only these institutions affect liquidity of stocks. According to the assumptions, liquidity of stocks has a direct relationship with institutional ownership and a reverse relationship with concentration of institutional ownership. Therefore, both theories were confirmed.

Jacoby & Zheng (2010) studied relationship between ownership dispersion (percentage of block stocks near stockholders) and liquidity of stocks by selection of a sample including 3576 American companies (1071 companies from NYSE, 323 companies from AMEX, and 2182 companies from NASDAQ). Their results showed that more dispersion of ownership improves liquidity of stocks.

Kini & Mian (1995) studied relationship between ownership concentration (dispersion) and proposed price difference of buy and sell of stocks by selection of a sample of 1063 companies in USA Securities Bourse. They didn't find any significant relationship between these two variables.

Sarin *et al* (2000) used sectional analysis to study effect of information advantage of institutions on price gap and incorrect selection of traders. They found that higher share of ownership by institutions and managers (intra-organizational personnel) caused increment of price gap and decrement of market depth.

Chang *et al* (2010), in a paper titled "Liquidity and return of stocks in Japan", studied relationship between stocks return and liquidity. They found that there was a strong negative relation between liquidity and stocks return.

Fang *et al* (2009), in a paper titled "Liquidity of stocks and company value", studied relationship between liquidity of stocks and performance of company. They found that there was a strong positive relation between liquidity of stocks and performance of company.

Chung *et al* (2008) studied effects of corporative leadership on liquidity of stocks using 24 indices related to financial and operational glassiness and ownership structure. They found that better Corporative leadership causes more liquidity and less price effect.

Chordia *et al* (2008), in a paper titled "Liquidity and market efficiency", suggested that short-term anticipation capability of stocks has a reverse relation with market efficiency. They found that when distance of buy and sell prices are limited, return anticipation is less. In their opinion, in an efficient market, return anticipation by past information has less efficiency.

Rezapour (2010), in a paper titled "Relationship of institutional ownership and liquidity of stocks in Iran", studied relationship of institutional ownership and liquidity of stocks. According to the assumptions, they found that there is a direct relationship between institutional ownership level and liquidity of stocks. But, there is a reverse relationship between institutional ownership concentration and liquidity of stocks. Therefore, in this research, both theories of information or transactional efficiency and incorrect selection were confirmed.

Izadina & Rasaeian (2010), in a paper titled "Ownership dispersion and liquidity of stocks", studied relationship between ownership concentration level and liquidity of stocks of companies accepted in Tehran Stock Exchange. The results show that there is no significant relationship between ownership dispersion and liquidity of stocks in Tehran Stock Exchange.

Izadina & Rasaeian (2009), in a paper titled "Difference of buy and sell proposed price and profit quality in Iran", studied relationship between the research variables. They found that 27% of changes in difference of buy and sell proposed price are described by changes in profit quality.

3- Research methodology:

This is an application research by goal, and a descriptive-correlation one by method and nature. The goal of this research is study of relationship between Corporative ownership (independent variable) and liquidity of stocks (dependent variable). Linear regression was used to study the relation between these variables. The assumptions were examined by confidence level of 95%. Also, test for nonlinear relationship between variables was done. Regarding the value of F statistic and significance level, it was found that linear regression is the best fit for variables.

3-1- Research hypotheses:

According to the goal of this article, these assumptions will be tested:

Assumption1: There is a relationship between Institutional Ownership Level and Liquidity of Stocks.

Assumption2: There is a relationship between Corporative Ownership Level and Liquidity of Stocks.

Assumption3: There is a relationship between Managerial Ownership Level and Liquidity of Stocks.

Assumption4: There is a relationship between Ownership Concentration Level and Liquidity of Stocks.

3-2- Data collection method:

In this research, libraries and archives were used to collect the related data. The research tools were financial statements, notes, and financial reports of the companies, gathered by Rahavard Novin Software and site of Tehran Stock Exchange. After classification and calculations in Excel, data was finally analyzed by SPSS.

3-3- Research model and measurement of variables:

To test the assumptions, Rubin Model (2007) was used. The general model used in this research is:

$$LIQUIDITY\ MEASURES_{i,t} = \alpha + \beta_1(OWNERSHIP_{i,t}) + \beta_2BLOCK_{i,t} + \beta_3SIZE_{i,t} + \beta_4PRICE_{i,t} + \beta_5BM_{i,t} + \beta_6VOLAT_{i,t} + \varepsilon_{i,t}$$

Where:

$LIQUIDITY\ MEASURES_{i,t}$: Different criteria of liquidity for company i in the period t

$OWNERSHIP_{i,t}$: Ownership type (stockholders combination) for company i in the period t

$BLOCK_{i,t}$: Ownership concentration for company i in the period t

$SIZE_{i,t}$: Size of company i in the period t

$PRICE_{i,t}$: Size of company i in the period of t

$BM_{i,t}$: Ratio of book value of company i in the period t

$VOLAT_{i,t}$: Ratio of book value to market value of company i in period t

$\varepsilon_{i,t}$: Error term for company i in period t

Independent variables:

In this article, ownership structure is the independent variable which is investigated in two main aspects:

a) Ownership type (stockholders combination)

Institutional ownership: percentage of stocks hold by public companies

Company ownership: percentage of stocks hold by corporation components

Managerial ownership: percentage of stocks hold by board members

b) Ownership concentration level

Percentage of stocks hold by stock blocks: percentage of published stocks hold by five first great stockholders of the company

Dependent variable:

Variables of researches of Cueto (2009), Agarwal (2008), and Rubin (2007) were used to calculate liquidity of stocks.

a) Trading measures (trade-driven)

1. **Trading volume:** Number of transacted stocks in a given period:

TVO = Trading volume

2. **Trading value:** This is obtained from multiplication of stocks price by trading volume. This measure was calculated for one-year intervals:

TVA = TVO × Price

Where:

TVA: Trading value of stocks

TVO: Trading volume of stocks

Price: Price of each stock

3. **Stock turnover rate:** Volume of traded stocks divided by number of stocks published by a company in a given period:

TOR = TVO / S

Where:

TOR: Stock turnover rate

TVO: Trading volume of stocks

S: Number of published stocks

Control variables:

1. **Stocks price:** Average of stocks price of a company in an annual or seasonal interval.

2. **Size:** Natural logarithm of company's value at the end of period.

3. **Book value to market value:** This measure is obtained from division of book value by market value at the end of period.

4. **Return vibration:** This variable is used as risk control index. To calculate this measure, standard deviation was calculated.

5. Statistical society and sample

The society of this research includes all companies accepted in Tehran Stock Exchange from 2005 to 2009, with the following conditions:

1. Company was accepted in Tehran Stock Exchange before 2008.
2. End of financial year of each company is March 20.
3. Number of trading days of the company in each year is not less than 70 days.
4. Company is not a member of investment and financial companies.
5. Financial data of company is accessible. Regarding to the above limitations, 93 companies were selected as statistical sample by systematic deletion method.

4- Findings and data analysis:

- Test Results of First Assumption:

Findings from statistical tests and analyses in table 1 show that coefficient of independent variable of Institutional ownership in regression pattern of first, second, and third models for liquidity measures is negative. Since sig (significance level) of T and F for all models are less than 5%, H_0 is rejected and H_1 is accepted. Thus, assumption is accepted. Therefore, there is a reverse (negative) relationship between Institutional ownership level and liquidity of stocks. Then, it can be said that the more the Institutional ownership level, the less the liquidity of stocks. Thus, assumption is confirmed.

Table 1: Test Results of First Assumption.

Dependent variable	Independent variable		Variance analysis	Demonstration power			Watson camera statistic	Result	
	Institutional Ownership Level			F statistic (sig.)	R	R^2			Adjusted R^2
	Coeff.	t statistic (sig.)							
TVO	-0.831	-6.303 (0.000)	42.013 (0.000)	0.605	0.366	0.357	1.958	Confirmed	
TVA	-0.722	-6.446 (0.000)	47.399 (0.000)	0.628	0.394	0.386	1.956	Confirmed	
TOR	-2.114	-7.024 (0.000)	42.860 (0.000)	0.609	0.371	0.362	1.948	Confirmed	

- Test Results of Second Assumption:

Findings from statistical tests and analyses in table 2 show that coefficient of independent variable of Corporative ownership in regression pattern of first, second, and third models for liquidity measures is negative. Since sig (significance level) of T and F for all models are less than 5%, H_0 is rejected and H_1 is accepted. Thus, assumption is accepted. Therefore, there is a direct (positive) relationship between Corporative ownership level and liquidity of stocks. Then, it can be said that the more the Corporative ownership level, the more the liquidity of stocks is. Thus, second assumption is confirmed.

Table 2: Test Results of Second Assumption.

Dependent variable	Independent variable		Variance analysis	Demonstration power			Watson camera statistic	Result	
	Institutional Ownership Level			F statistic (sig.)	R	R^2			Adjusted R^2
	Coeff.	t statistic (sig.)							
TVO	0.266	8.356 (0.000)	50.573 (0.000)	0.640	0.410	0.402	1.987	Confirmed	
TVA	0.230	8.532 (0.000)	56.660 (0.000)	0.662	0.438	0.430	1.980	Confirmed	
TOR	0.591	7.983 (0.000)	46.890 (0.000)	0.626	0.392	0.383	1.978	Confirmed	

- Test Results of Third Assumption:

Findings from statistical tests and analyses in table 3 show that coefficient of independent variable of Management ownership in regression pattern of first, second, and third models for liquidity measures is negative. Since sig (significance level) of T and F for all models are less than 5%, H_0 is rejected and H_1 is accepted. Thus, assumption is accepted. Therefore, there is a reverse (negative) relationship between Management ownership level and liquidity of stocks. Then, it can be said that the more the Management ownership level, the less the liquidity of stocks is. Thus, third assumption is confirmed.

Table 3: Test Results of Third Assumption.

Dependent variable	Independent variable		Variance analysis	Demonstration power			Watson camera statistic	Result
	Institutional Ownership Level			F statistic (sig.)	R	R ²		
Liquidity variables	Coeff.	t statistic (sig.)						
TVO	-0.088	-7.166 (0.000)	45.321 (0.000)	0.619	0.384	0.375	1.962	Confirmed
TVA	-0.076	-7.288 (0.000)	50.826 (0.000)	0.641	0.411	0.403	1.956	Confirmed
TOR	-0.194	-6.752 (0.000)	41.812 (0.000)	0.604	0.365	0.356	1.950	Confirmed

- *Test Results of Forth Assumption:*

Findings from statistical tests and analyses in table 4 show that coefficient of independent variable of Ownership Concentration Level in regression pattern of first, second, and third models for liquidity measures is negative. Since sig (significance level) of T and F for all models are less than 5%, H₀ is rejected and H₁ is accepted. Thus, assumption is accepted. Therefore, there is a reverse (negative) relationship between Ownership Concentration Level and liquidity of stocks. Then, it can be said that the more the Management ownership level, the less the liquidity of stocks is. Thus, Forth assumption is confirmed.

Table 4: Test Results of Forth Assumption.

Dependent variable	Independent variable		Variance analysis	Demonstration power			Watson camera statistic	Result
	Institutional Ownership Level			F statistic (sig.)	R	R ²		
Liquidity variables	Coeff.	t statistic (sig.)						
TVO	-0.245	-9.293 (0.000)	55.275 (0.000)	0.657	0.432	0.424	1.957	Confirmed
TVA	-0.214	-9.607 (0.000)	62.439 (0.000)	0.679	0.462	0.454	1.948	Confirmed
TOR	-0.565	-9.294 (0.000)	53.226 (0.000)	0.650	0.422	0.414	1.942	Confirmed

5- *Conclusion and discussion:*

According to the results of this research, there is significant relation between ownership structure and liquidity of stocks. The results of the first assumption test show that there is a reverse (negative) relationship between institutional ownership level and liquidity of stocks. The increase in institutional ownership lead to information asymmetry, since in the presence of institutional ownership concentration, few informed stockholders may trade according to their informative advantage. While, institutions enter the company as strategic stockholders, main percentage of company stocks will be blocked and thus, free float stocks level will decrease and so liquidity of stocks will be decreased.

The results of second assumption test show that there is direct (positive) relationship between corporative ownership and liquidity of stocks. Since corporative stockholders (out of the organization) do not access to hidden information of company, they prevent information asymmetry and cause decrement of gap of buy and sell proposed price. Stockholders do not hold and block stock for a long term and the presence of corporative stockholders increase free float stocks level of companies and thus increases liquidity of stocks.

The results of third assumption test show that there is a reverse (negative) relationship between management ownership level and liquidity of stocks. Senior managers may have more hidden information trades which leads to decrease in liquidity of stocks. Management stockholders are included in strategic stockholders who have invested in company stocks for long term management goals, therefore the presence of management stockholders will lead to decrease in free float stocks level of companies and thus they cause a decrease in liquidity of company stocks.

The results of forth assumption test show that there is a reverse (negative) relationship between ownership concentration level and liquidity. In companies with concentrated structure, senior stockholders have access to secret and hidden information and thus traders are risk of wrong decision making. As these main stockholders have great blocks of company stocks, they can cause decrease in free float stocks level of companies and liquidity of stocks.

Results of this research conflict with findings of Cueto (2009), Agarwal (2008), Rubin (2007), and Jacoby & Zheng (2010), but coincides with findings of Kini and Mian (1995) and Sarin *et al* (2000).

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