A Review of the Relationship between Earnings Management and Companies' Stock Liquidity

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ABSTRACT

The purpose of this study is to consider the relationship between earnings management and companies' stock liquidity. In the current study, six measures have been used to measure the earnings management: (abnormal) discretionary accruals, ROA ratio, (abnormal) discretionary cash flows, absolute value of (abnormal) discretionary cash flows, (abnormal) discretionary expenses and absolute value of (abnormal) discretionary expenses. Hence, data of 93 companies listed in Tehran Stock Exchange from 2002 to 2010 were used as the sample. The hypotheses were tested by panel data regression model. Findings corroborate that there is a significant positive relationship between ROA and companies' stock liquidity. In fact, it can be said that by reduction of net profit ratio to total assets, the stock liquidity will be reduced. Among other mentioned measures and stock liquidity no significant relationship was found.
KEYWORDS: Earnings Management, Stock Liquidity, ROA ratio

1. INTRODUCTION

The process of measurement and reporting of profit and its outcome has an important role in a company management and usually users of financial statements give great importance to it. Since calculation of enterprise earnings is affected by accounting estimation methods and financial statements preparation is performed by manager of commercial entity, the management may manage earnings for various reasons (Valizadeh Larijani, 2008). Healy and Wahlen (1999) suggest that earnings management occurs when managers use their personal judgment in financial reporting and manipulate transactions structure to change financial reporting. The purpose of this work is to mislead some stakeholders about company financial performance or influence on outcomes of contracts that their agreement depends on achieving certain profit. Profit is one of the criteria used for evaluating management performance, but some believe that earnings management phenomenon undermines credibility of profit. Hence, detection of earnings management is one of the concerns of researchers, analysts, capital markets practitioners as users and auditors as certificate authorities of financial statements (Noravesh et al, 2009). Managers can manipulate earnings by using a variety of methods. Instruments used in relation to earnings management include: a) manipulation of discretionary accruals which have not a direct effect on cash flows. For example, non-fulfillment of borrowing conditions and change of the amount of bad debts expense as well as delaying the disposal of fixed assets whose useful life has ended can be pointed. And b) manipulation of actual financial events that changes cash flows and even in some cases it changes accruals, such as reducing advertising expenses to increase profit (Roychowdhury, 2004). Given that companies earnings management activities may degrade information quality related to profit, this can affects significantly the company stock liquidity.

Liquidity is defined as the market ability to absorb large volumes of transactions without cause extreme price fluctuations (O'hara, 1998). In general, earnings management degrades the quality of earnings report and disclosure. The current accounting theory emphasizes that companies link between disclosure quality of accounting information and stock market liquidity (Lambert et al 2007; Kim and Verrecchia, 2001; Leuz and Verrecchia, 2000). The most important research question for regulators and investors is economic consequences of company disclosure practices (in general) and earnings management practices (in particular). Regarding the possibility of measuring companies' stock market liquidity and the level of companies' self-interests manipulation, an opportunity will be provided to examine these questions by research method. Earnings management will degrade disclosure quality; in turn this increases information asymmetry and decreases trading liquidity. Given that companies earnings management activities may reduce information quality related to profit; this can affects significantly stock liquidity and their cost of capital (Ascioglu et al, 2012). There is some evidence to suggest that companies with high earnings management

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have less stock market liquidity. Regarding this, the relationship between earnings management (based on accounting figures and actual earnings management) and market liquidity measures that are related to information asymmetry, can be scrutinized in this research. According to the above-mentioned materials, this research aims to identify and explain the relationship between earnings management and companies' stock liquidity and find an answer to this question that whether the degree of companies' stock liquidity is affected by earnings management (accounting information manipulation)?

2. LITERATURE REVIEW AND PREVIOUS RESEARCH

Although a number of academic studies suggest that earnings management is useful because of increased value of earnings figure information, it is generally believed that managers may engage in earnings management in order to increase their own self-interest that in such a case earnings management may not be beneficial for shareholders and other stakeholders. In this regard, some researchers have used agency theory as a tool for disaggregation of opportunistic earnings management from efficient earnings management. Agency theory states that when the objectives of managers are different with shareholders goals and also company's regulatory mechanism is not efficient enough; managers perform according to their objectives that are not necessarily consistent with shareholders goals (Paul et al, 2009). If earnings management is performed with regard to opportunistic goals by managers, companies that have greater agency costs will show higher earnings management. In other words, there is a positive relationship between the level of earnings management and the severity of the agency conflict. But if earnings management is not consistent with directors' self-interests, it is expected that companies with high agency costs will have lower earnings management, because managers do not manage the earnings in line with their own self-interests and in fact earnings management in such companies improves the communication between managers and owners (Taghavi et al, 2010).

Pornsit Jiraporn et al (2008) in a research entitled "Is earnings management opportunistic or efficient?" disaggregated opportunistic and useful applications of earnings management by using agency theory. They argued that if managers take advantage of earnings management opportunistically, in such a case companies with high agency costs should have used high degree of earnings management, in other words, there is a positive relationship between the degree of earnings management and severity of conflict of interest among agents and companies owners. Conversely, earnings management may be performed in order to transfer personal data and therefore it increases information content of earnings that it will be useful for shareholders. If so, it is expected that the frequency of the use of earnings management would not be in record of companies with high agency costs because the managers will not manipulate earnings to increase their self-interest. Their results showed that there was an inverse relationship between agency costs and earnings management and companies with widespread (limited) earnings management undergo less (more) agency costs. Bukit (2009) in his study entitled "Surplus Free Cash Flows and Earnings Management" found that there was a positive relationship between them. He indicated that Independent Audit Committee helped companies with surplus free cash flows so that they could decrease the increased profit due to earnings management. Bhundia (2012) in his study investigated the relationship between earnings management and free cash flows. He showed a positive relationship between earnings management and free cash flows, and also asserted that free cash flows could act as an incentive to manage earnings. Dai (1998) in his study showed that information asymmetry between managers and shareholders could be considered a necessary condition for earnings management. His findings show that there is a direct relationship between earnings management and information asymmetry. Fang (2009) by examining the relationship between companies stock liquidity and company value stated that liquidity can have a positive effect on company performance, in such a way that providing a better performance will lead to demand of shareholders in capital market and increase of stock trading will also result in corporate value improvement. Lim et al (2008) in their study entitled "Firm diversification and earnings management: evidence from seasoned equity offerings" presented some evidence based on which companies with high earnings management compared to companies with seasoned equity offering that did not use earnings management practices had a smaller amount of long-term performance of seasoned equity offering.

Barbedo et al (2007) examined the relationship between corporate governance mechanisms and liquidity levels by using data on sales and purchase orders of 55 companies listed on the Sao Paulo Stock Exchange in Brazil. They found that the probability of trades based on hidden information in companies with more stringent corporate governance was much less and more liquidity depended on decreased trades based on hidden information. Amihud and Mendelson (1991) in their study entitled "Liquidity and Stock Returns" conclude that companies tend to adopt policies to increase their stock liquidity because liquidity will increase company's return and value. In addition, they observed in their study that managers who were looking to increase liquidity of their companies securities, performed this work through changing the company into a public joint stock company, voluntary disclosure of

information and shares distribution among more shareholders (the in other words, increasing the number of free float shareholders of company). Baker and Stein (2003) in their study entitled "Market Liquidity as a Sentiment Indicator" suggested that as high liquidity stocks had many buyers and sellers and transactions were performed with lowest price effect, managers decided to release stocks when they were with high liquidity so that they would reduce the negative price effect at the time of stocks release. Brown and Keeler (2005) investigated management of accruals and its causes. The results of their study show that the tendency of managers to manipulate earnings through accruals is to avoid negative variance by predictions and to avoid further losses or reduced earnings. Chhabra et al (2009) in their study entitled "Investor protection effects on corporate liquidity and the cost of capital" state that as the result of reduction in stock liquidity that acts as a protective shield for the investor, company's cost of capital will increase. In other words, we can claim that by weakening of this protective shield (liquidity), the expected return of investor will change.

Mashayekhi et al (2005) by investigation the role of discretionary accruals in earnings management of listed companies in Tehran Stock Exchange by using the modified Jones model concluded that earnings management was used in the studied companies. In fact, these companies management have attempted to increase earnings through discretionary accruals after reduction in cash from operations which reflect the poor performance of the business unit, in order to compensate that. Zare (2002) studied factors affecting stock liquidity capability in Tehran Stock Exchange. The results of this study show that in Tehran Stock Exchange, particularly among active companies, liquidity capability of stocks among stocks individual characteristics, primarily relates largely to stock trading volume and secondarily to value of the company that actually indicates the company's stock market depth.

Moradzadeh Fard et al (2010) examined the role of accruals management in stock liquidity of listed companies in Tehran Stock Exchange. Their results show that accruals management has significant negative effects on companies' stock liquidity; so that more earnings management will lead to information asymmetry and higher transaction costs; in this case, unadvised traders tendency to trade companies shares decrease severely and company's stock liquidity will fall.

3. RESEARCH HYPOTHESES

Since in the current study earnings management is presented by 6 measures, six hypotheses have been designed as follows:

1.3. There is a negative relationship between discretionary accruals and stock liquidity.
2.3. There is a positive relationship between ROA and stock liquidity.
3.3. There is a positive relationship between discretionary accruals and stock liquidity.
4.3. There is a negative relationship between the absolute value of discretionary cash flows and stock liquidity.
5.3. There is a negative relationship between discretionary expenses and stock liquidity.
6.3. There is a positive relationship between the absolute value of discretionary expenses and stock liquidity.

4. RESEARCH METHODOLOGY

This study is an applied research and is considered as an experimental study. To test the hypotheses, the required data are collected from existing data sources such as Tadbir Pardaz software and Rahavard Novin and analyzed by Eviews statistical software. Also, Excel software is used for information arranging and sorting and *Minitab* software is used for data normalization. Regression models are used to test the hypotheses that they will be discussed as follows.

4.1 Statistical population, statistical sample and time domain
Statistical of this study includes all companies listed in Tehran Stock Exchange.
In order to select the sample from 2002 to 2010 following conditions have been considered:
1. Companies whose fiscal year ended on March 20.
2. Companies that did not stop their activity and did not change their financial period during the period of this study.
3. Companies whose information was available until March 20, 2010.
4. Investment companies and financial intermediation have been excluded.
Thus, 93 companies comprise the study sample.

4.2 Operational definition of variables
To facilitate observation and investigation of variables used in this study, they are presented in the following table:

Table 1 Operational definition of variables

Variable type	variable name	variable symbol	variable formula
Independent variables	discretionary accruals	ACER	The remaining clauses absolute value (error) in Dechow and Dichev model multiple by 10^4 (2002) (according to model 3)
	ROA ratio	ROA	If net profit divided by total assets is less than 1%, one, otherwise zero is assigned.
	abnormal operating cash flow	ACFO	disturbing sentence in model 5
	absolute value of abnormal operating cash flow	AACFO	absolute value of abnormal operating cash flow
	(abnormal) discretionary expenses	ADIS	Residual value multiple by 10^6 in model6
	absolute value of (abnormal) discretionary expenses	AADIS	absolute value of (abnormal) discretionary expenses multiple by 10^4
Dependent variable	illiquidity	ILLIQ	$ILLIQ_{iy} = \frac{1}{D_{iy}}\sum_{t=1}^{D_{iy}}|R_{iyd}| / VOLD_{ivyd}$
Control variables	turnover	TURN	natural log of the average number of shares traded to the number of outstanding shares
	standard deviation of daily returns	SIGMA	natural log of standard deviation of daily returns
	average daily stock price	PRICE	the average daily closing stock price

4.3 Research models presentation

Liquidity: In general, liquidity of an asset is the speed and ease of its transaction. Because of invisible and multi-faceted nature of liquidity it cannot be measured by just one specific measurement. The most common measures of liquidity include market breadth (range), market depth, and market flexibility as well as time (transactions speed). Some other factors related to stock liquidity contain the number of shares traded each day, the number of shares traded each day, the value of shares traded daily, total trade volume divide to total market value and the number of buyers and frequency of purchase. Amihud (2002) introduced a new measure to calculate liquidity that is assessable through the use of daily data on returns and trading volume. Also in the present study Amihud measure will be used. This measure is equal to ratio of the absolute value of daily stock returns to the transaction volume each day:

$$ILLIQ_{iy} = \frac{1}{D_{iy}}\sum_{t=1}^{D_{iy}}|R_{iyd}| / VOLD_{ivyd} \tag{1}$$

where in the above equation, D_{iy} equal to the number of days for stock i in year y, R_{iyd} equal to the return on stock i in day d in year y, and $VOLD_{ivyd}$ is the Rial volume associated with Riyd. As can be seen, (in this measure as well as many other measures) the trading volume and the number of trading days of a stock are considered to calculate liquidity. The less is this ratio, the more is stock liquidity and vice versa, the more ratios indicate the lack of less stock liquidity. This means that if stock trading volume is low or during a certain period the number of trading days is low as the result the stock will have low liquidity.

In this study, the following regression model is used to examine the relationship between earnings management and stock liquidity:

$LNILLIQ_{i,t} = \alpha + \beta_1 LN(PRICE)_{i,t} + \beta_2 LN(SIGMA)_{i,t} + \beta_3 LN(TURN)_{i,t} + \beta_4 EM_{i,t} + \beta_4 EM_{i,t-1} + \varepsilon t$ (2)

In above model PRICE is the daily average closing price, SIGMA is standard deviation of daily returns, TURN is average number of stocks traded to outstanding shares and EM is earnings management. After earnings management measures are obtained by the following relationships they are inserted in the regression model (2) so the relation of each with stock liquidity will be examined.

The first hypothesis examines the relationship between discretionary accruals and companies stock liquidity. The first measure of earnings management is derived from Dechow and Dichev (2002) developed measure. The level of earnings management is absolute value of the residual in the following regression:

$\Delta WC_t /A_t = b_0 + b_1 CFO_{t-1}/A_t + b_2 CFO_t /A_t + b_1 CFO_{t+1}/A_t + \varepsilon_t$ (3)

In above relation, CFO is operating cash flow; ΔWC is change in working capital, A_t is average total net assets at the year t. Change in working capital is calculated from the following relation: $\Delta WC = \frac{WC_t}{TA_t} - \frac{WC_{t-1}}{TA_{t-1}}$ (4)

In the second hypothesis it is predicted that there is a positive relationship between ROA and stock liquidity of companies. The second measure of earnings management is based on the tendency of managers to avoid reporting losses. Here, ROA for companies whose net profit to total assets is less than 1% is one, and for other companies is zero. This ratio is a measure that shows how much income the company has acquired from its assets, in other words, how much has been the rate of return on invested resources.

In the third hypothesis it is predicted that there is a positive relationship between (abnormal) discretionary cash flows and stock liquidity. The third measure of earnings management prompted Roychowdhury (2006) to review the

actual earnings management. Managers can manage earnings to avoid abnormal earnings reporting by manipulating the fundamental activities of the business unit such as increased manufacturing by less cost of goods sold or special discounts to temporary sale increase. Dechow et al estimated that abnormal cash flow was equal to company's real operating cash flow minus company's normal operating cash flow determined in the industry. Company's normal operating cash flow determined in the industry can be obtained by the following regression:

$$\frac{CFO_t}{A_t} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{t-1}}\right) + \beta_1 \left(\frac{S_t}{A_{t-1}}\right) + \beta_2 \left(\frac{\Delta S_t}{A_{t-1}}\right) + \varepsilon_t \qquad (5)$$

In above relation, S_t is total sales in time t and ΔS_t, $S_t - S_{t-1}$. Therefore, constant factor and other coefficients of this model can be obtained from sales and assets of companies' in each industry to predict company's cash flows. Parameters α_0, α_1, β_1, and β_2 are obtained and then calculated by actual values and estimated parameters for each company and (normal) predicted values, then obtained CFO of each company is subtracted from actual CFO to calculate abnormal CFO. The abnormal cash flow is company's real operating cash flow minus predicted operating cash flow. High cash flow indicates high earnings quality, while low or negative abnormal cash flow show earnings management and ultimately the low quality earnings.

According to the fourth hypothesis, there is a negative relationship between absolute value of discretionary cash flows and stock liquidity. Here, ACFO absolute value is used as a measure of earnings quality. It is called AACFO when absolute value is applied on it. In this case that has been referred by Roychowdhury (2006) there is little evidence to suggest that companies use actual activities for income smoothing. If companies use actual activities for income smoothing, then the absolute value of abnormal cash flows (AACFO) will be a better measure for earnings management. The last measure of earnings management that discussed again by Roychowdhury is based on (abnormal) discretionary expenses levels (ADIS). Due to procedures of Dechow et al (1998), here the performance is similar to the method used for calculation of abnormal operating cash flow i.e. (abnormal) discretionary expenses of company minus its predicted discretionary expenses. The following model is used to obtain predicted discretionary expenses:

$$\frac{DISEXP_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{t-1}}\right) + \beta \left(\frac{S_{t-1}}{A_{t-1}}\right) + \varepsilon_t \qquad (6)$$

4.4. Descriptive statistics: in Table 2 the descriptive statistics for variables are presented.

Table 2 Descriptive statistics

variable name	NO.	symbol	Average	SD	Max	Min	Skewness	kurtosis
illiquidity	837	ILLIQ	0/017613	0/0023	0/056479	0E-9	19/905	432/5
discretionary accruals	837	ACER	0/085	0/235	0/4181	0/00002	9/38	128/6
ROA	837	ROA	0/0633	0/2436857	1/00	0/0	3/59	10/9
abnormal operating cash flow	837	ACFO	-0/0036	0/2547487	6/04	-1/42	15/59	379/9
absolute value of abnormal operating cash flow	837	AACFO	0/1041	0/2324693	6/04	0/000094	20/35	509/9
(abnormal) discretionary expenses	837	ADIS	-0/0022	0/0272	0/57	-0/18	10/26	228/6
absolute value of (abnormal) discretionary expenses	837	AADIs	0/074	0/025	0/57	0/011	14/43	296/0
average daily stock price	837	PRICE	8/349	0/99546	11/63	5/02	0/43	0/05
standard deviation of daily stock returns	837	SIGMA	-5/4963	2/13081	2/4	-13/03	0/46	0/55
turnover	837	TURN	-0/5225	1/34652	4/03	-6/10	-0/25	1/48

The above table shows information about central parameters including mean and median and dispersion parameter of standard deviation, maximum and minimum and skewness and kurtosis of variables. As Table 2 shows the sample obtained includes 837 companies. The maximum mean value relates to variable of average market price and the minimum relates to variable of standard deviation of daily stock return. The variables average of lack of liquidity, abnormal operating cash flow, (abnormal) discretionary expenses, the standard deviation of daily stock return and logarithm of negative turnover and average of other variables are positive. The average variable of lack of liquidity

is equal to 0/017613 and it is positive. Since the average return was positive for shares of companies, by related calculations the average of this variable for the sample under studied became positive.

5. HYPOTHESES TEST RESULTS

5.1 The first hypothesis

In the first hypothesis it is claimed that there is a relationship between two variables of abnormal accruals and stock liquidity. In other words, the first research hypothesis is: "there is a negative relationship between the level of abnormal accruals and stock liquidity." Results from the test are presented in Table 4:

Table 4 The first hypothesis test results

variables	t-statistic	coefficients	significance
constant	0.264896	0.00208	0.0110
discretionary accruals	0.342373	-1. 50672	0.6129
variable in previous year	-0.312427	-1.287866	0.5015
the average daily stock price	2.349589	3.96E-06	0.0191
standard deviation of daily returns	5.01407	-0.00473	0.0013
turnover	3.273299	1.27E-05	0.0011
Significance of F-statistics: 0.000001		F-statistics: 11.52136	
Durbin-Watson: 2.164641	adjusted coefficient of determination: 0.082122		coefficient of determination: 0.086406

As can be seen in Table 4, F-statistic value and significance level related to this statistic is equal to 11.52 and 0.000001, i.e., the estimated regression model is totally significant. Since, P-Value related to independent variable is over 5% and insignificant, the first hypothesis is not accepted. However, the independent variable negative coefficient means inverse relationship with liquidity variable, but this inverse relationship is not significant according to statistical results.

By inserting the above values in the regression model we have:

$LNILLIQ_{i,t} = 0.00208 + 3.96E\text{-}06 \ (PRICE)_{i,t} -0.00473 \ (SIGMA)_{i,t} + 1.27E\text{-}05 \ (TURN)_{i,} -1. 50672 -1.287866 + \varepsilon t$

5.2 Second hypothesis

The second hypothesis is: "There is a positive relationship between ROA and stock liquidity." Results from the test are presented in Table 5.

Table 5 The second hypothesis test results

variables	t-statistic	coefficients	significance
Constant	0.269808	-0.000223	0.0214
ROA	2.177525	1.15E-05	0.0298
high value in previous year	2.947820	0.001326	0.0033
the average daily stock price	0.280433	6.72E-06	0.0253
standard deviation of daily returns	4.532476	0.000432	0.0086
turnover	2.558380	1.24E-05	0.0107
Significance of F-statistics: 0.000002		F-statistics: 13.36812	
Durbin-Watson: 2.162479	adjusted coefficient of determination: 0.090836		coefficient of determination: 0.093048

As can be seen, P-Value related to independent variable is less than 5% and significant. In other words, there is a significant relationship between ROA and liquidity variable. According to the kind of data related to two variables of illiquidity and ROA, in fact it can be said that by decrease of profit ratio to total assets, the illiquidity becomes more (or the liquidity will reduce). Thus, the positive relationship between two mentioned variables according to statistical results is significant and positive, meaning that the second hypothesis is confirmed.

5.3. The third hypothesis

The third hypothesis is: "There is a positive relationship between abnormal cash flows and stock liquidity." The results from the test are presented in Table 6.

Table 6 The third hypothesis test results

variables	t-statistic	coefficients	significance
Constant	0.218305	0.000171	0.0123
abnormal cash flow	1.807003	2.79E-06	0.0612
high value in previous year	0.588545	6.64E-07	0.5563
the average daily stock price	2.289442	3.02E-06	0.0223
standard deviation of daily returns	4.939398	-1.95E-05	0.0007
turnover	3.009862	1.12E-05	0.0027
Significance of F-statistics: 0.000003		F-statistics: 11.66130	
Durbin-Watson: 2.168637	adjusted coefficient of determination: 0.084942		coefficient of determination: 0.087221

As can be seen, P-Value related to independent variable is more than 5% and insignificant. Therefore, the third hypothesis is not accepted (at 95% confidence level). However, this hypothesis is acceptable due to significance of independent variable (0.0612) at 90% confidence level.

5.4 The fourth hypothesis

The fourth hypothesis is: "There is a negative relationship between absolute value of abnormal cash flows and stock liquidity." The results from the test are presented in Table 7.

Table 7 The fourth hypothesis test results

variables	t-statistic	coefficients	significance
Constant	0.274559	0.000218	0.0027
absolute value of abnormal cash flow	0.047884	7.06E-07	0.5618
high value in previous year	0.239752	961E-05	0.3074
the average daily stock price	2.643868	3.20E-06	0.0084
standard deviation of daily returns	5.033769	0.000473	0.0000
turnover	-5.718286	1.09E-05	0.0000
significance of F-statistics: 0.000000		F-statistics: 11.56652	
Durbin-Watson: 2.163079	adjusted coefficient of determination: 0.073387		coefficient of determination: 0.076669

As can be seen, P-Value related to independent variable is more than 5% and insignificant. Therefore, the fourth hypothesis is not accepted. In other words, there is no significant relationship between absolute value of abnormal operating cash flow and liquidity stock variable.

5.5. The fifth hypothesis

The fifth hypothesis is: "There is a positive relationship between (abnormal) discretionary expenses and stock liquidity." The results related to the test are presented in Table 8.

Table 8 The fifth hypothesis test results

variables	t-statistic	coefficients	significance
Constant	0.295954	0.000232	0.0250
Discretionary expenses	0.428299	-1.26E-06	0.5295
high value in previous year	0.707015	7.72E-07	0.4798
the average daily stock price	-2.144619	4.76E-06	0.0323
standard deviation of daily returns	5.069302	-2.39E-05	0.0062
turnover	2.783653	1.36E-05	0.0055
significance of F-statistics: 0.000000		F-statistics: 11.62849	
Durbin-Watson: 2.161874	adjusted coefficient of determination: 0.069750		coefficient of determination: 0.075030

As can be seen, P-Value related to independent variable is more than 5% and insignificant. Therefore, the fifth hypothesis is not accepted. In other words, there is no significant relationship between (abnormal) discretionary expenses and stock liquidity variable.

5.6 The sixth hypothesis

The sixth hypothesis is: There is a negative relationship between (abnormal) discretionary expenses and stock liquidity." The results related to the test are presented in Table 9.

Table 9 The sixth hypothesis test results

variables	t-statistic	coefficients	significance
Constant	0.309369	0.000242	0.0085
absolute value of discretionary expenses	0.428299	3.10E-07	0.7156
high value in previous year	0.707015	7.19E-05	0.4488
the average daily stock price	-2.341180	4.34E-06	0.0195
standard deviation of daily returns	5.069302	-2.20E-05	0.0000
turnover	5.607290	1.22E-05	0.0000
significance of F-statistics: 0.000000		F-statistics: 11.70111	
Durbin-Watson: 2.164804	adjusted coefficient of determination: 0.071175		coefficient of determination: 0.074453

As can be seen, P-Value related to independent variable is more than 5% and insignificant. Therefore, the sixth hypothesis is not accepted. Although, the negative coefficient of independent variable indicates a negative relationship with liquidity variable; this negative relationship is not significant according to statistical results.

6. CONCLUSIONS

The current research is on the relationship between earnings management and stock liquidity of listed companies in Tehran Stock Exchange. As shown in previous studies, liquidity can have a positive effect on company performance. So that, providing a better performance will lead to shareholders demand in capital market and by increased stock transactions, the value of company will also improve. Earnings management also degrades the quality of disclosure and this in turn increases the information asymmetry and decreases trade liquidity.

In the first hypothesis of this study it was stated that there was a negative relationship between discretionary accruals and stock liquidity. In fact, this hypothesis suggests that discretionary accruals reduce companies' stock liquidity. The results obtained suggested that this hypothesis was rejected. However, the negative coefficient of independent variable means inverse relationship with liquidity variable, this inverse relationship was not significant according to statistical results. The test of the second hypothesis about the relationship between ROA and stock liquidity of companies showed that there was a significant relationship between them. The positive coefficient of the independent variable of ROA also indicated a direct relationship with dependent variable. Due to the kind of data related to two variables of illiquidity and ROA in fact it can be said that by reduction of profit ratio to total assets the liquidity level will increase (or liquidity will decrease). Thus, the positive relationship between two mentioned variables, according to statistical results was significant and positive, meaning that the second hypothesis is confirmed. The third hypothesis test results showed that at 95% confidence level there was no relationship between the level of abnormal operating cash flow and stock liquidity. However, this hypothesis is acceptable due to significance of independent variable at 90% confidence level. Also, in the fourth hypothesis, there was not a relationship between absolute value of abnormal operating cash flow and stock liquidity. Thus, this hypothesis was not accepted as well and the fifth and sixth hypotheses test results also indicated a lack of relationship between variables.

7. RESEARCH LIMITATION

1. Discretionary expenses consist of selling, general and administrative expenses, as well as research and development expenses. According to the literature, earnings management through research and development

expenses is also very common; given that R & D expenditure data were not extractable from financial statements of statistical community companies this measure was excluded inevitably.

2. Due to the limited statistical community of listed companies in Tehran Stock Exchange whose fiscal year ended in March, generalization of this study results to other companies should be done with caution.

8. Suggestions for future studies

The following cases can be considered for future studies as suggested topics to investigate:

1. Using other measures of liquidity variable, such as the number of days of transaction, the number of occurrences of a transaction, turnover, transactions value, free float, stock turnover, free float turnover, trading waiting-time.

2. Review of factors affecting liquidity by using tests such as factor analysis.

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