

The Relationship between Investment Opportunities and Earnings Management of Listed Companies in Tehran Stock Exchange

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Abstract

The goal of this study is to survey the relationship between investment opportunities and earning management in the companies listed in Tehran Stock Exchange. The time period of the present study is from 2008 to 2012. Due to restrictions on the choice of the statistical populations and samples, 119 companies were selected to test the hypotheses. From standpoint of goal, this research is an applied research. The results of testing hypotheses using simple least squares regression models indicated that there is a significant relationship between investment opportunity and earning management. The companies that have greater investment opportunities use more earning management. The results of second hypothesis indicated the companies that have more centralized ownership structure use lesser earning management. According to the results, it can be generally concluded that effective factors in executing earning management consist of level of investment opportunities and the structure of ownership centralization in capital structure in companies.

Keywords: investment opportunities, earning management, structure of centralized ownership

Introduction

Earning management is one of the issues which has been received more attention by researchers and other people interested in accounting topics. One of the important aspects of accounting standards and its application by strategic systems is that these standards have high flexibility and allow managers use a set of accounting methods and principles for reporting financial statements and financial performance in terms of conditions (Ferdinand et al, 2000). Some these authorities allow managers provide useful information to users and communicate effectively them. In accounting positive literature is called effective earning management (Bartov et al, 2000). Against, some managers have the authorities to hide their weak performance using a set of accounting methods and principles and finally provide non – useful financial statement to

users. Such authorities are called opportunistic earning management in the literature (Becker, 1998).

Previous studies have shown that accrual profit shows better company performance in comparison with cash flows and generally market values more accrual items compared in cash flows. Some researches such as Krishnan (2003) show that earning management leads to increase informative level of profits, because there is positive significant relationship between abnormal accrual items, as earning management representative and future profitability. Some researchers including Scott (2000) and Dichev et al (1996) found managers manipulate reported profits to increase their benefits. On the other hand, companies use their sources to improve their relative position to competitors and shape better opportunities in future. Market share and its growth are identified as important

criteria for company performance in industrial organization studies. Investment opportunities are composed of important part of company value. When investors determine company value based on reported accounting information, they will consider how the company will grow in the future (Shengquan et al, 2011). Hence, the determination of investment opportunity is an important factor for users of financial statements. According to the importance of investment opportunities and usage level of managers from accrual items for manipulating earning, the research tries to survey the relationship between investment opportunities and earning management of companies listed in Tehran Stock Exchange.

Research Background

Focusing on earning management and financial leverage, Watts and Zimmerman (1990) found that abnormal accrual items in the companies have high debt have negative effect on output – profit relation.

Ferdinand et al (2000) surveyed the effect of investment opportunity set and debt on output – profit relation and accrual item pricing. Their results on 9638 year – firm showed that there is a positive relationship between output – profit relation and investment opportunities and there is a negative relationship between output – profit relation and debt amount. They also indicated that pricing of abnormal accrual items increase in the companies which have high investment opportunities and decrease in the companies which have high debt.

Kumar and Krishnan (2008) surveyed the role of investment opportunities and relevance of earnings components. Their research indicated that there is a negative relationship between investment opportunity set and relevance of operational cash and there is a positive relationship between investment opportunity set and relevance of accrual items.

Sung (2009) considered the relationship between financial leverage and investment opportunities in Chinese companies. Four different ratios were used to measure financial leverage. The results indicated that there is a negative relationship between growth and leverage ratios.

Umatlu (2010) considered the relationship between financial leverage and investment decisions for manufacturing firms in Turkish Stock Exchange. In the research, he used panel data with constant effects method to estimate multivariate linear model. The study indicated that there is a negative relationship between investment decisions and financial leverage and there also is a negative relationship between debt and tendency to invest in capital assets.

Abor and Bokpin (2010) studied the effect of investment opportunity set and company performance on dividend policy from 1990 to 2006. Their results indicated that there is a negative relationship between investment opportunity and dividend policies.

Chen et al (2010) studied the relationship between investment opportunities and earning management from 2002 to 2005. The results showed that there is a negative relationship between investment opportunities and earning management.

Shing Quan et al (2011) studied investment growth, the relationship between equity, profit and book value of equity. The results showed that there is a positive relationship between investment growth opportunities and higher profit and there also is there is a positive relationship between earning stability coefficient and high investment growth opportunities.

Karimi et al (2010) studied the effect of financial leverage and growth opportunities on investment decisions in the companies listed

Tehran Stock Exchange from 2001 to 2007. Their study on 104 companies indicated that there is a negative significant relationship between financial leverage and investment decisions.

Mehran and Safar Zadeh (2011) surveyed the relationship between corporate governance and earning quality with native approach. The sample consists of 117 Iranian companies for the period 2007 – 2010. In the research, earning quality was measured with 7 measurement methods. The results indicated that there is a negative relationship between corporate governance and quality of accrual items, profit stability, profit smoothing and conservative profit and there is also positive relationship between corporate governance and ability to profit prediction and timely profit. But there is not significant relationship between corporate governance and value relevance of profit. In another words, we can not fully accept one of the two hypotheses of confidence and monitoring. In addition to, explanatory power of the patterns reduces with separating corporate governance index into its components. Finally, the relationship between corporate governance and multiple criteria of earning quality is not identical in different industries.

Arab Salehi and Akhlaghi (2011) studied the effect of investment opportunities, sources of financing and tax on dividend policy of the companies listed in Tehran Stock Exchange from 2002 to 2009. Using panel data, the results indicated that there is a negative significant relationship between investment opportunities and dividend policy and there is also a negative relationship between financial leverage and sources of external financing and dividend policy.

Research Hypotheses

Main Hypothesis: there is a significant relationship between investment opportunities and earning management.

In above hypothesis, the relationship between investment opportunities and earning management is measured in all companies. But following hypotheses are formulated to show the companies that have more investment opportunities have more earning management or not.

First Sub – Hypothesis: companies that have more investment opportunities, higher earning management are done.

Second Sub – Hypothesis: companies that have more centralized ownership structure, lesser earning management are done.

Identifying the companies with centralized ownership structure, after calculating and collecting data about corporate ownership concentration and mean of this variable, the companies that their ownership concentration is more than mean, they will have centralized ownership structure.

Third Sub – Hypothesis: in the companies that difference between ownership concentration percentage and share percentage of major shareholder is more than other companies, higher earning management is done.

Difference between ownership concentration percentage and share percentage of major shareholder means that at first major shareholders are identified and registered and then according to share of major shareholder, its difference with the total percentage of shares of other major shareholders is calculated.

Research Methodology

From standpoint of goal, the research is an applied research. This is because the data is related to previous periods and collected without the involvement of the researcher; the research is classified into semi – empirical and post – event researches. According to analysis, the relationship between independent and dependent variable is correlation type. Library method was used to collect the data. In library section, theoretical principles were collected from specialized books and magazines and then the data related to selected companies was extracted with referring to financial statements, explanatory notes and using Dena Sahm and Tadbir Pardaz applications and their

CDs financial information. Eviews 7 software and mix data regression method were used to analyze the data and test hypotheses.

The research was done in a 5-year period from 2008 to 2013. After applying some limitations, statistical population is all companies listed in Tehran Stock Exchange. Random sampling was used to select the sample.

Research Models and Variables

Following model was used to measure abnormal accrual items (earning management) (Chen et al, 2010).

$$ACC_{i,t} = \alpha_0 + \alpha_1 \Delta REV_{i,t} + \alpha_2 PPE_{i,t} + \alpha_3 CFO_{i,t} + \alpha_4 DCF_{i,t} + \alpha_5 DCF_{i,t} * CFO_{i,t} + \epsilon_{i,t}$$

ACC: net income minus operating cash flow divided by all assets in first year of company

REV: sale changes in current year than previous year divided by all assets in first year of company

PPE: book value of fixed assets divided by all assets in first year of company

CFO: operating cash flow at the end of the year divided by all assets in first year of company

DCf: if operating cash flow is negative, it equals 1, otherwise 0.

$$Abnormal\ Accruals_{i,t} = ACC_{i,t} - [\hat{\alpha}_0 + \hat{\alpha}_1 \Delta REV_{i,t} + \hat{\alpha}_2 PPE_{i,t} + \hat{\alpha}_3 CFO_{i,t} + \hat{\alpha}_4 DCF_{i,t} + \hat{\alpha}_5 DCF_{i,t} * CFO_{i,t}]$$

Abnormal Accruals

$$Absolute\ Abnormal\ Accruals_{i,t} = |Abnormal\ Accruals_{i,t}|$$

Following model was used to test main hypothesis:

$$Absolute\ Abnormal\ Accruals_{i,t} = \beta_0 + \beta_1 IOS_{i,t} + \beta_2 Cash\ Flow\ Rights_{i,t} + \beta_3 Devation_{i,t} + \beta_4 CEO\ Duality_{i,t} + \beta_5 Firm\ Size_{i,t} + \beta_6 Levarage_{i,t} + \beta_7 Big\ N\ Auditor_{i,t} +$$

Model of Testing Hypotheses

β_8 Opertaing Cash Flow_{i,t}+ β_9 Institutional Holding_{i,t}+ β_{10} Management Holding_{i,t}+ β_{11} Absolute Net Income Change_{i,t}+ β_{12} ROA_{i,t}+ β_{13} Loss_{i,t} + ϵ
 Following model was used to test first sub – hypothesis:

$$\text{Absolute Abnormal Accruals}_{i,t} = \beta_0 + \beta_1 \text{IOS}_{i,t} + \beta_2 \text{DUM}_{i,t} + \beta_3 \text{DUM}_{i,t} * \text{IOS}_{i,t} + \beta_4 \text{CEO Duality}_{i,t} + \beta_5 \text{Firm Size}_{i,t} + \beta_6 \text{Leverage}_{i,t} + \beta_7 \text{Big N Auditor}_{i,t} + \beta_8 \text{Opertaing Cash Flow}_{i,t} + \beta_9 \text{Institutional Holding}_{i,t} + \beta_{10} \text{Management Holding}_{i,t} + \beta_{11} \text{Absolute Net Income Change}_{i,t} + \beta_{12} \text{ROA}_{i,t} + \beta_{13} \text{Loss}_{i,t} + \epsilon$$

Following model was used to test second sub – hypothesis:

$$\text{Absolute Abnormal Accruals}_{i,t} = \beta_0 + \beta_1 \text{Cash Flow Rights}_{i,t} + \beta_2 \text{DUM}_{i,t} + \beta_3 \text{DUM}_{i,t} * \text{Cash} + \beta_4 \text{CEO Duality}_{i,t} + \beta_5 \text{Firm Flow Rights}_{i,t} + \beta_6 \text{Leverage}_{i,t} + \beta_7 \text{Big N Auditor}_{i,t} + \beta_8 \text{Opertaing Cash Flow}_{i,t} + \beta_9 \text{Institutional Holding}_{i,t} + \beta_{10} \text{Management Holding}_{i,t} + \beta_{11} \text{Absolute Net Income Change}_{i,t} + \beta_{12} \text{ROA}_{i,t} + \beta_{13} \text{Loss}_{i,t} + \epsilon$$

Following model was used to test third sub – hypothesis:

$$\text{Absolute Abnormal Accruals}_{i,t} = \beta_0 + \beta_1 \text{Devation}_{i,t} + \beta_2 \text{DUM}_{i,t} + \beta_3 \text{DUM}_{i,t} * \text{Devation}_{i,t} + \beta_4 \text{CEO Duality}_{i,t} + \beta_5 \text{Firm Size}_{i,t} + \beta_6 \text{Leverage}_{i,t} + \beta_7 \text{Big N Auditor}_{i,t} + \beta_8 \text{Opertaing Cash Flow}_{i,t} + \beta_9 \text{Institutional Holding}_{i,t} + \beta_{10} \text{Management Holding}_{i,t} + \beta_{11} \text{Absolute Net Income Change}_{i,t} + \beta_{12} \text{ROA}_{i,t} + \beta_{13} \text{Loss}_{i,t} + \epsilon$$

Research Results

Descriptive Statistics of Quantitative Variables

This section provides descriptive statistics of quantitative variables. They consist of average, mean and standard deviation of the variables. The results indicate that the average of abnormal accrual items is 8%. According to the model, abnormal accrual items of all variables were divided by all assets at the beginning of the period. IOS in this research is 1.39 which consists of 4 indexes. Cash flow rights which show the ownership share of major shareholder in ownership structure of companies are an average of 73 per cent. Leverage ratio indicates that companies supply averagely 70% of their assets by debt. Share of institutional shareholders in ownership structure and share of managers from company ownership are averagely 39% and 65%, respectively. The changes of net profit are an average of 9 per cent and ROA is an average of 11 per cent.

Table 1 descriptive statistics of quantitative variables

Title	Average	Mean	Standard deviation
AAA	0.08	0.05	0.09
IOS	1.39	1.34	1.34
CFR	0.73	0.80	0.21
Deviation	0.32	0.36	0.11
FSIZE	5.76	5.7	0.52
LEV	0.70	0.66	0.43
OCF	0.13	0.11	0.14
INS	0.39	0.29	0.34
MANAGE	0.65	0.71	0.26
INCOME	0.09	0.04	0.36
ROA	0.11	0.09	0.21
Frequency of observations	591	591	591

AAA: earning management, IOS: investment opportunity set, CFR: cash flow rights, FSIZE: firm size, LEV: debt ratio, INS: institutional ownership, MANAGE: managerial ownership, INCOME: absolute net profit, ROA: return of assets.

Descriptive Statistics of Qualitative Variables

This section provides descriptive statistics of qualitative variables. Descriptive statistics consist of average, mean and standard deviation. The results indicate that CEO and chairman of the board was one person in 18 per cent of companies, 24 per cent of companies were audited by audit firms and finally 13 per cent of companies had losses during the investigation in terms of performance.

Table 2 descriptive statistics of qualitative variables

Title	Average	Mean	Standard
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			deviation
CEO duality	0.18	0	0.38
AUD	0.24	0	0.43
LOSS	0.13	0	0.33

Pearson Correlation Coefficient

Table 3 shows Pearson correlation coefficient among the variables. The results indicate that there is a significant relationship between investment opportunities and earning management at 2% correlation coefficient and there is a significant relationship between cash flow rights and earning management at 6% correlation coefficient. There is also positive significant relationship between CEO duality and leverage ratio with earning management. Increasing leverage ratio motivates managers to manipulate abnormal accrual items towards earning management. There is a negative correlation between type of audit firm and earning management. Having higher quality service, these firms limit managers for manipulating abnormal accrual items.

Table 3 correlation coefficient among variables

Title	AAA	IOS	CFR	Deviation	Duality	FSIZE	LEV	OCF	AUD	INS	E	INCOME	ROA
AAA	1												
IOS	0.02*	1											
CFR	0.06*	0.05	1										
Deviation	0.05*	0.06	0.18*	1									
Duality	0.09*	-0.06	-0.06	0.06	1								
FSIZE	0.04*	0.06	0.07	0.04	-0.11	1							

					*								
LEV	0.17*	-0.29*	0.004	-0.01	0.17*	0.002	1						
AUD	-0.10*	0.04	0.18*	0.18*	0.001	0.22*	-0.09*	1					
INS	-0.007*	0.07	0.41*	0.42*	-0.01	0.16*	-0.01	0.09*	0.09*	1			
MANAGE	0.04	0.11*	0.75*	0.55*	0.07	-0.04	-0.06	0.19*	0.04	0.41*	1		
INCOME	0.15*	-0.04	0.06	0.05	-0.03	0.15*	0.02	-0.04	-0.09*	0.03	-0.001	1	
ROA	0.19*	0.17*	0.05	0.06	-0.11*	-0.01	-0.04	0.07	0.25*	0.11*	0.11*	-0.03	1
LOSS	0.33*	-0.28*	-0.004	-0.02	0.15*	-0.06	0.32*	-0.18*	-0.23*	-0.05	-0.07	0.12*	-0.39*

Unit Root Test

Before analyzing the hypothesis, the reliability of the variables was measured. The reliability of the variables means that average and variance of the variables are constant during the time. Consequently, using these variables does not lead to make false regression. Because of this, ایم پسران شین test was used that has been provided in following diagram. The results indicate that possibility level of all variable is smaller than 5% and then all variables have reliability during the study.

Title Phillips – Perron

	Statistics	Possibility
AAA	-25.42	0.000
IOS	-25.85	0.000
CFR	-12.77	0.000
Deviation	-12.57	0.000
Duality	-28.27	0.000
FSIZE	-18.23	0.000
LEV	-9.33	0.000
AUD	-24.63	0.000
OCF	-25.65	0.000
INS	-12.35	0.000
MANAGE	-22.53	0.000
INCOME	-15.25	0.000
ROA	-24.73	0.000
LOSS	-25.87	0.000

Reference: researcher's calculations

Table 4 unit root table

Variance Anisotropy Test

Arch test was used to measure variance anisotropy. If significance level of statistic is bigger than 5 per cent, it means that there is variance homology in the study and consequently the model has needed efficiency to test the hypotheses. The results indicate that there is effectiveness and variance homology in the models.

Table 5 variable anisotropy test

Title	Statistics	Significance level
First model	0.02	0.87
Second model	0.03	0.85
Third model	0.03	0.84
Fourth model	0.03	0.84

Reference: researcher's calculations

Linearity test

VIF test was used to measured linearity between the variables and the results are presented below. Since Cettered VIF is smaller than 5 in all variables, then there is not linearity between the variables.

Table 6 VIF test

Title	Statistics
	Cettered VIF
IOS	1.17
CFR	2.90
Deviation	2.74
Duality	1.08
FSIZE	1.17

LEV	1.29
AUD	1.15
OCF	1.21
INS	1.13
MANAGE	2.55
INCOME	1.06
ROA	1.28
LOSS	1.43

Reference: researcher's calculations

Results of Chow Test

Table 7 shows the result of Chow test. It was used to select type of mixed data model (between common effects and constant effects). Since significance level in this test is higher than 5 per cent, the data of common effects should be used and if significance level of smaller than 5 per cent, the data of constant effect should be used. The results of the test indicate that F – statistics and its significant level mean that there are individual and group effects and the data to constant effects should be used to estimate the models.

Table 7 Chow test

Title	Statistics	Significance level
First model	1.83	0.000
Second model	1.61	0.000
Third model	1.66	0.000
Fourth model	1.65	0.000

Reference: Researcher's calculations

Results of Hausman Test

Table 8 shows the result of Huasman test. It was used to select type of mixed data model (between common effects and constant effects). Since significance level in this test is higher than 5 per cent, the data of common effects should be used and if significance level of smaller than 5 per cent, the data of random

effect should be used. The results of the test indicate that F – statistics and its significant level mean constant effects should be used.

Table 8 Hausman Test

Title	Statistics	Significance level
First model	57.42	0.000
Second model	41.08	0.000
Third model	50.17	0.000
Fourth model	46.69	0.000

Reference: researcher's calculations

Test of Hypotheses

Test of Main Hypothesis

Main Hypothesis: there is a significant relationship between investment opportunities and earning management.

H₀: there is not a significant relationship between investment opportunities and earning management.

H₁: there is a significant relationship between investment opportunities and earning management.

F – Statistics and significance level indicate that there is a significant relationship between

the variables. The results of Durbin – Watson show that there is not autocorrelation between statements (it should be between 1.50 & 2.50). The results indicate that the coefficient of investment opportunities is positive 4 per cent and it is significant at 5% error level. Main hypothesis is supported at 95% confidence level and it should be noted that there is a significant relationship between investment opportunities and earning management. Among control variables, there is a significant relationship between firm size, leverage ratio, type of audit firm, performance type and return on asset with abnormal accrual items (earning management). According to above results, it can be argued that the companies that their debt is more than expected level, it will leads managers to manipulate their earnings for keeping contract conditions. Because larger firms have staff with more expertise, it would be considered a sign of audit quality for reducing to manipulate abnormal accrual items by managers.

Table 9 results of main hypothesis

Title	Coefficient	T – statistics	Prob.
C	0.007	0.31	0.75
IOS	0.04	2.86	0.004*
Dev	0.02	0.16	0.87
Duality	0.01	0.25	0.81
FSIZE	0.04	2.82	0.004*
LEV	0.02	2.17	0.03*
AUD	- 0.07	-2.74	0.002*
OCF	0.01	1.04	0.29
INS	-0.06	-1.17	0.24
MANAGE	-0.02	-0.18	0.85
INCOME	0.001	5.44	0.000*
ROA	0.15	10.12	0.000*
LOSS	0.11	12.56	0.000*
Adjusted R-squared		0.34	
F-statistics		24.41	
Prob (F-statistics)		0.000	
D.W		1.78	

* significant at 5% error level

Reference: researcher's calculations

Test of First Sub – Hypothesis

First sub – hypothesis: the companies that have greater investment opportunities have more earning management.

H0: the companies have greater investment opportunities; they will use lesser earning management.

H1: the companies have greater investment opportunities; they will use more earning management.

F – Statistics and significance level indicate that there is a significant relationship between the hypotheses. The results of Durbin – Watson test show that there is not autocorrelation between the statements (it should be between 1.5 & 2.5). Dummy variable was used to test first sub – hypothesis. If a company has greater investment opportunities, it equals 1 and other companies are 0. DUM * IOS was used to test first sub – hypothesis. Because there is a relationship between more investment opportunities and more earning management, then the coefficient

of the variable should be positive and significant to be supported. The results indicate that the coefficient of DUM*IOS variable is +3% and it is significant at 5% error level. First sub – hypothesis is supported with 95% confidence level and it can be noted strongly there is a significant relationship between investment opportunities and earning management. Among control variable, there is a significant relationship between firm size, leverage ratio, type of audit firm, performance type and return on assets with abnormal accrual items (earning management). Type of performance (dummy variable) and earning management have positive significant relationship. It means that the companies have negative performance, the profit in future periods are transferred in current period in order to maintain market expectations.

Table 10 the results of first sub – hypothesis

Title	Coefficient	T – statistics	Prob.
C	-0.03	-0.72	0.46
IOS	-0.02	-2.74	0.006*
DUM	-0.02	-1.32	0.18
DUM*IOS	0.03	3.23	0.001*
Duality	0.01	1.11	0.26
FSIZE	0.008	1.11	0.26
LEV	0.03	3.27	0.000*
AUD	-0.09	-1.06	0.28
OCF	-0.06	-2.09	0.03*
INS	-0.01	-1.05	0.29
MANAGE	0.02	1.45	0.14
INCOME	0.01	3.67	0.000*
ROA	0.27	6.13	0.000*
LOSS	0.12	8.66	0.000*
Adjusted R-squared		0.21	
F-statistics		13.73	
Prob(F-statistics)		0.000	
D.W		1.84	

Second sub – hypothesis: there is a negative significant relationship between centralized ownership structure and earning management.

Test of Second Sub – hypothesis

H₀: the companies that have more centralized ownership structure use more earning management.

H₁: the companies that have more centralized ownership structure use less earning management.

F – Statistics and significance level indicate that there is a significant relationship between the hypotheses. The results of Durbin – Watson test show that there is not autocorrelation between the statements (it should be between 1.5 & 2.5). Dummy variable was used to test second sub – hypothesis. If a company has greater centralized ownership structure, it equals 1 and other companies are 0. DUM * CASH was used to test second sub – hypothesis. Because there is a relationship between more centralized ownership structure and more

earning management, then the coefficient of the variable should be positive and significant to be supported. The results indicate that the coefficient of DUM*CASH variable is – 12 % and it is significant at 5% error level. Second sub – hypothesis is supported with 95% confidence level and it can be noted strongly there is a negative significant relationship between more centralized ownership structure and earning management. Among control variable, there is a significant relationship between firm size, leverage ratio, performance type and return on assets with abnormal accrual items (earning management). Type of performance (dummy variable) and earning management have positive significant relationship. It means that the companies have negative performance, the profit in future periods are transferred in current period in order to maintain market expectations.

Table 11 the results of testing second sub – hypothesis

Title	Coefficient	T – statistics	Prob.
C	-0.06	-1.33	0.18
CASH	0.01	3.04	0.000*
DUM	0.11	1.7	0.08
DUM*CASH	- 0.12	1.7	0.08
Duality	0.01	1.33	0.018
FSIZE	0.01	1.43	0.15
LEV	0.04	4.06	0.000*
AUD	-0.01	-1.28	0.19
OCF	-0.06	-2.006	0.04*
INS	-0.01	-1.03	0.30
MANAGE	0.02	1.03	0.29
INCOME	0.01	3.66	0.000*
ROA	0.29	6.73	0.000*
LOSS	0.13	9.82	0.000*
Adjusted R-squared		0.21	
F-statistics		12.64	
Prob(F-statistics)		0.000	
D.W		1.84	

Significance at 5% error level & Reference: researcher's calculations

Test of Third Sub – hypothesis

Third Sub – Hypothesis: in the companies that the difference between ownership concentration percentage and share percentage of major shareholder is more than other companies, earning management is conducted more.

H₀: in the companies that the difference between ownership concentration percentage and share percentage of major shareholder is more than other companies, earning management is conducted less.

H₁: in the companies that the difference between ownership concentration percentage and share percentage of major shareholder is more than other companies, earning management is conducted more.

F – Statistics and significance level indicate that there is a significant relationship between the hypotheses. The results of Durbin – Watson test show that there is not autocorrelation between the statements (it should be between 1.5 & 2.5). Identifying the difference between ownership concentration percentage and share percentage of major shareholder, at first major share holders was identified and registered. Then the share percentage of most major shareholders was considered and its difference with total share percentage of other major shareholders was calculated. Dummy variable was used to test third sub – hypothesis. DUM * DEVIATION was used to test third sub – hypothesis. Because there is a negative relationship between more difference between ownership concentration percentage and share percentage of most major shareholders and less earning management, then the coefficient of the variable should be negative and significant to be supported. The results indicate that the coefficient of DUM*CASH variable is – 21 % and it is significant at 5% error level. Second sub – hypothesis is supported with 95% confidence level and it can be noted strongly there is a negative significant relationship between more centralized ownership structure and earning management. Among control variable, there is a significant relationship between leverage ratio, type of audit firm, performance type and return on assets with abnormal accrual items (earning management). Type of performance (dummy variable) and

earning management have positive significant relationship. It means that the companies have negative performance, the profit in future periods are transferred in current period in order to maintain market expectations.

Table 12 results of testing third sub – hypothesis

Title	Coefficient	T – statistic	Prob.
C	-0.0006	-0.02	0.98
DEVIATION	0.02	0.54	0.58
DUM	0.08	2.97	0.003*
DUM*DEVIATION	-0.21	-2.83	0.004*
Duality	0.01	2.34	0.02*
FSIZE	-0.0006	-0.16	0.87
LEV	0.04	3.24	0.000*
AUD	-0.05	-1.28	0.19
OCF	-0.1	-0.06	0.95
INS	-0.04	-0.73	0.46
MANAGE	0.05	0.36	0.71
INCOME	0.01	4.35	0.000*
ROA	0.22	7.58	0.000*
LOSS	0.12	12.51	0.000*
Adjusted R-squared		0.29	
F-statistics		19.87	
Prob (F-statistics)		0.000	
D.W		1.79	

Significance at 5% error level

Reference: researcher's calculations

Applied Suggestions

According to the results, it is recommended that:

- 1) Investment opportunities lead to make earning management. Hence, it is recommended to investors consider

usage level of abnormal accrual item in order to manipulate their earning in addition to identifying investment opportunities.

- 2) Ownership concentration structure leads to make earning management. Because there are two earning management types (efficient & opportunist) in accounting and financial literatures, so companies should be pay attention that companies use each of them. Efficient earning management increase shareholders' benefits and opportunist earning management increase managers' benefits.

Some suggesting for future researches

1. It is recommended to consider dominant factors on investment opportunities and measure its relationship with stock return.
2. It is recommended to survey the relationship between investment opportunities and financial performance of companies listed in Tehran Stock Exchange.
3. It is recommended to survey the relationship between internal and external mechanisms of corporate governance and earning management of companies listed in Tehran Stock Exchange.

Discussion and Conclusion

The study surveyed the relationship between investment opportunities and earning management of companies listed in Tehran Stock Exchange from 2008 to 2012. According applied limitations in selecting statistical population and statistical sample, 119

companies were selected to test the hypotheses. Four hypotheses were developed in this regard. After using ordinary least squares regression model, the results indicated that there is a significant relationship between investment opportunities and earning management and the results of second sub – hypothesis showed that there is a negative relationship between centralized ownership structure and earning management. According to above results, it can be generally concluded that two effective factors of earning management are level of investment opportunities and ownership centralization structure in capital structure of companies.

Reference:

1. Arab Salehi, Medi & Akhlaghi, Hasan Ali, (2011), "the effect of investment opportunities, sources of financing and tax on dividend policy of companies listed in Tehran Stock Exchange", journal of Securities, 4th year, No.16, pp: 101-118.
2. Karimi, Farzad, Akhlaghi, Hasan Ali & Fatemeh Rezaee Mehr, (2010), "the effect of financial leverage and growth opportunities on investment decision of companies listed in Tehran Stock Exchange", journal of financial accounting, second year, No.8, pp: 60-74
3. Mehrani, Kaveh & Safar Zadeh, Mohammad Hossein, (2010), "determining the relationship between corporate governance and earning quality with localization approach", journal of accounting knowledge, second year, No. 7, pp: 69-98
4. Abor, J., Adjasi, C. K. D., Bokpin, G. A. and Osei, K. A. (2010), "Do Financial Markets Matter in Investment Opportunity Set: Evidence from Emerging Markets", Journal of Money,

- Investment and Banking, Issue 14, pp. 5-15.
5. Bartov, E., S. Radharkrishnan, and I. Krinsky (2000). "Investor sophistication and Patterns in stock returns", *The Accounting Review*, 43-63.
 6. Becker, DeFond and Jiambalvo. (1998). "The Effect of Audit Quality on Earnings Management", *Contemporary Accounting Research*, Vol 15, No 1: pp 20-36.
 7. Chen, K. Y., Randal J. E., and Shengmin H. (2010). "The Investment Opportunity Set and Earnings Management: Evidence from the Role of Controlling Shareholders", *Corporate Governance: An International Review*, 18(3). PP: 193-211
 8. Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1996). Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by SEC. *Contemporary Accounting Research*, 13(1), 1-36.
 9. Ferdinand .A .G, Sidney. And Land B. (2000), " The effect of investment opportunity set and debt level on earning-returns relationship and the pricing of discretionary accruals. www.ssrn.com .
 10. Hao, S.H. Jin, Q and Zhang, G (2011). " Investment Growth and the Relation between Equity Value, Earnings, and Equity Book Value", *THE ACCOUNTING REVIEW*, Vol. 86, No. 2, pp. 605-635
 11. Krishnan. (2003). "Audit quality and the pricing of discretionary accruals". *Journal of Practice and Theory*, Vol. 22: pp 12-25.
 12. Krishna R. Kumar, Gopal V. Krishnan (2008). " The Value-Relevance of Cash Flows and Accruals: The Role of Investment Opportunities, *THE ACCOUNTING REVIEW*, Vol. 83, No. 4, PP. 997-1040
 13. Scott, R. W. (2000). *Financial accounting theory*, 2nd Ed. New Jersey: Prentice Hall.
 14. Sung, C. (2009), "On the interactions of financing and investment decisions" , *managerial finance*, vol 35, pp: 691-699.
 15. Watts, R. L., and J. L. Zimmerman, 1990. Positive accounting theory: A ten-year perspective. *Accounting Review*, 65 (January): 131-156.
 16. Umutlu, M. (2010), "Firm leverage and investment decision in an emerging market. www.ssrn.com