An investigation of the relationship between major shareholder and Earnings management (EM) in companies listed in Tehran stock exchange (TSE)

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Abstract: The aim of the present study is to investigate the relationship between major shareholder and earnings management (EM) in companies listed in Tehran stock exchange (TSE). EM refers to conscious behavior from the management, and it is significantly performed in order to reduce cyclical fluctuations. The data were analyzed using a population consisted of 126 companies listed in TSE (with a reduction to55 companies through sampling) in the time period beginning in 2004 and ending in 2009. the analysis was performed in pooled data method and ordinary least square (OLS) regression. the study includes one hypothesis investigating the relationship between major shareholder percentage as an independent variable and EM as a dependent variable. The results confirmed the hypothesis at 5 percent error showing that major shareholder are significantly associated with EM, which leads to its reduction.

Keywords: major shareholder, earnings management (EM), total Accruals

Introduction:

Earnings management (EM) refers to conscious behavior from the management, and it is mainly performed to reduce cyclical fluctuation in earning. in general, researchers believe that investors choose to invest in companies with a uniform consistent profitability trend. Companies reporting high fluctuations in earnings, would have greater risk compared to other companies. thus reported earnings as one of the financial decision criteria, has special credit and financial analysis consider earnings as an essential factor in their investigation and judgments. That's why managers have strong incentive to show a favorable image of the company and reduce investment risk so that they could manage earnings. Shareholders, especially those with higher share percentage (that is major shareholders) make effort to monitor the firm management activities so as to gain greater efficiency. in this study, we attempted to empirically investigate the relationship between major shareholders and EM in companies listed in TSE.

* **Research Hypothesis:**

There is a significant association between major shareholder ownership and earnings management (EM).

* **Research Method**:

Given that the purpose of the present study is to investigate the relationship between major shareholder monitoring and EM, so this is an applied study carried out in a semi-Empirical method. for regression model estimation and hypothesis testing,pooled data econometrics was applied. To develop the theoretical bases of the study, library method was used and then using TSE website as well as tadbir Pardaz software package, primary on companies were gathered directly from TSE website and firms financial statement in order to calculate the variables and examine the study hypothesis. so data collection was carried out using field study. In this study we tried to make research plan lead to a correct casual relationship between the study dependent and independent variable. the present study was conducted based on a semi-empirical research plan. based on purpose, scientific studies include fundamental, applied, and practical studies. Results of a scientific study, whether fundamental or applied, would increase scientific and technical reserves. In the current study, data on companies listed in TSE were used to investigation the impact of major shareholder monitoring on EM. According, this is an applied study and the data required were collected using field study population consisted of 126 companies listed in TSE, which given the restrictions of our study, were qualified to attend in the population and finally a sample consisted of 55 companies were selected among different companies. To measure the dependent variable, namely EM (earning management), equation

(3) was used to measure the independent variable, percentage of share owned by major shareholders was applied. for hypothesis testing,multivariate regression model between dependent and independent variables and pooled data analysis were used.

*Definition of the study's keywords:

1-major shareholders: shareholders in large companies are divided into two groups including major shareholders and minor shareholders in different literature those shareholders with more than 5 percent of a firms total stock are considered as major shareholders.

1-earnings management (EM): the process of manipulating the identification time of income has been reported so that the earning flow reported has little changes, while not increasing the reported income in the long term. EM has a clear goal which is establishment a steady growth in earnings (Tirole, 1995).

3-total Accruals: is a result of the different between net earnings before extraordinary and non-regular items, and operating cash flow.

*Analysis the results: the study data were directly collected from financial statements of companies listed in TSE via its website.

The number of companies in the population – based on restrictions discussed in chapter(3)-was a total of 126 companies. The sample consisted of 55 companies. For calculating the dependent and independent variables and hypothesis testing, excel and Views software were applied. The dependent variable of the study is EM, and major shareholder monitoring is the independent variables, that were calculation by the shares owned by major shareholder to firms total shares. Regression test was carried out in the from of a hypothesis to examine the association between dependent and dependent variables. in this chapter, the relationship between independent and dependent variables was analyzed by applying poled data model and different tests, being presented next.

*Calculating the study variables and pr Paring data:

The independent variables of our study, namely monitoring practiced by major shareholders, was calculated with the help of share percentage owned by major shareholders for 55 sample companies during (2004-2009), and the results were drawn and classified in excel. The dependent variable of our study, that is EM, was calculated using the following equation for 55 sample companies over the years 2004 to 2009 :<<TACCR= EBXT-CFO :(Equation(1)>>, where EBXT is net earnings before extraordinary and non-regular items, and CFO is cash flow defined operations. After data collection, first some outliers were excluded. exclusion of these data is to prevent the results from being distorted by then. To do this, a column chart was drown for each variable in excel and then, data which were significantly different from other data were identified and eliminated. next, final data were loaded into E views.

*Descriptive statistics: in order to better understand the population of our study and get more familiar with the variables, it is necessary to describe the data prior to statistical data analysis. Statistical definition of data is a step in the way of identifying the pattern dominating them, as well as a basis for explaining the relationships between variables applied in research (Khorshidi and Ghoraishi, 2002). Thus prior to hypothesis testing, the descriptive statistics of the variables used in this study are investigated in industries, as shown in table (1) below.

*Table (1): results of descriptive statistics of the study variables over the period (2004-2009):

variable	mean	median	Standard deviation	max	min	Number of observations
Major shareholder monitoring	%46	%52	21	%94	%11	330
Earning management	0.0614	0.0224	0.1304	0.5977	-0.3290	330
Firm size	5.5058	5.44845	0.4345	6.9434	4.4506	330
Firm age	15.5139	13.0000	10.1420	43.0000	6.0000	330
Operating cash flow	0.1330	0.1215	0.1316	0.6296	-0.2765	330

*source: calculations by the researchers

As seen in table (1), the average major shareholder monitoring is %46 of riel. this value indicates that during (2004-2009),the amount of shares owned by major shareholders has been %46 on average. in addition, according to the above table, the average EM is %614, and its min and max values are -0.3290 and 0.5977, respectively. This indicates that the sample studied has a favorable variety for hypothesis testing. After the statistical definition of data, the correlation between the variables is tested. to determine the association between the correlation is a statistical tool by which one can measure the degree to which a variable is linearly associated with another variable. The correlation between the study variables is presented in table (2).

*Table (2)-correlation coefficient between the variables:

CFO	FG	FS	EM	OBM	CORRELATION COEEFICIENT P-VALUE
				1	OBH
			1	0.0121	EM
				0.718	
		1	-0.017	-.0850	FS
			0.740	0.012	
	1	0.0570	-.0142	-.086	FG
		0.0000	0.720	0.014	
1	0.0068	0.0046	-0.0190	-.0008	CFO
	0.674	0.014	0.605	0.960	

Correlation coefficient between the variables used in a model should not be too high, since the correlation between independent variables in a model would distort the regression results.

As seen in the above table, the correlation between the variables indicates lack of a significant correlation between these variables.

*Results of hypothesis testing:

*results of hypothesis testing using cross-sectional(Annual)data:

To test the hypothesis of the study in cross-sectional method, the following model was used for each of the year (2004-2009), separately: $EM_{I=1.....N}=A_0+A_1OBH+A_2FS_{IT}+A_3FG_{IT}+A_4CFO_{IT}+E_{IT}$ in this model, OBH denotes major shareholder percentage (independent variable), and EM is earnings management (dependent variables). FS, FG, and CFO are firm size, firm growth, and operating cash flow (control variables),respectively. Results of hypothesis testing for each of the year 2004-2009 (annual method)are presented in table (3)

*table (3)-results of hypothesis testing in annual (cross-sectional) method:

Description	2004	2005	2006	2007	2008	2009
t-statistic (p-value)	11.01	12.31	14.04	22.31	10.10	7.97
	(0.000)	(0.084)	(0.000)	(0.000)	(0.011)	(0.041
Coefficient	-0.37	-0.28	-0.88	0.63	-0.28	-0.97
Adjusted R-squared	0.784	0.368	0.674	0.551	0.841	0.407
Hypothesis confirmation or rejection	confirmed	rejected	confirmed	rejected	confirmed	confirmed

*source : results of the study.

According to the model if OBM coefficient is positive, major shareholder monitoring has a direct relationship with EM and if the coefficient is negative, they are inversely associated. As seen the results in different years are different. based on the results listed in tables(3-4), the study hypothesis is confirmed at a %95 confidence level in 2004,2006,2008,and 2009,while it is rejected for 2005. Also the type of relationship between independent and dependent variables is inverse in 2005,2004,2006,2008,and 2009,and in 2007, though the confidence level is %95, due to a direct association between the variables, the hypothesis is rejected.

*Results of hypothesis testing using pooled data:

In order to test the hypothesis and investigate the relationship between major shareholder monitoring and EM, the following model was used:

$EM_{I=1.....N}=A_0+A_1OBH+A_2FS_{IT}+A_3FG_{IT}+A_4CFO_{IT}+E_{IT}$ in the above model, OBH denotes major shareholder percentage (independent variable) and EM is earning management(dependent variable).FS,FG,and CFO are respectively, firm size, firm growth, and operating cash flow (control variables).results of hypothesis testing obtained by applying pooled data method and OLS regression model are presented in table (4). To do this, all data are pooled (combined) together and estimated by OLS regression. in this,model, the number of firms (cross-sections) is 55 and the number of year is (6). So, total observations in regression analysis is (330). In other words, the relationship of dependent and independent variables of the study is tested among 55 different companies on one hand, and on the other hand, it was tested in time span (2004-2009). Therefore, pooled data method was used to obtain reliable results. According to the model, if OBM coefficient is positive, major shareholder monitoring and EM will be directly associated and in case the coefficient is negative, they will be inversely associated.

*Table (4)-results of the hypothesis testing pooled data method:

$EM_{I=1,\ldots,N}=A_0+A_1OBH+A_2FS_{IT}+A_3FG_{IT}+A_4CFO_{IT}+E_{IT}$ testing model (1-4)	description
2004-2009	Time period
10.63 (0.000)	t-statistic (p-value)
0.69	Coefficient
330	Number of observations
0.491	Adjusted R-squared
confirmed	Hypothesis confirmation or rejection
inverse	Type of relationship

Results of hypothesis testing based on the information listed in table (4) indicate the confirmation of the hypothesis. Analyzing the results related to the hypothesis testing, we found t-statistic of the model testing at error level of 5 percent is in general significant and the relationship is inverse. Thus, the results of research using pooled data analysis indicate the confirmation of the study hypothesis. in order words an increase in major shareholder monitoring would reduce EM in the sample companies.

*Discussions and conclusions:

*results of the hypothesis testing:

For hypothesis testing, Annual and pooled data estimation method was used through applying a sample consisted of 55 companies listed in TSE, during (2004-2009). OLS regression was used to test the significance of the study hypothesis. with respect to the theoretical bases of the study explained in detail in chapter (2), one would expect that major shareholder monitoring and EM are significantly associated. the model related to the hypothesis testing is as follows: $EM_{I=1,\ldots,N}=A_0+A_1OBH+A_2FS_{IT}+A_3FG_{IT}+A_4CFO_{IT}+E_{IT}$ in the above model, OBH denotes major shareholder percentage e (independent variable) and EM indicate earning management (dependent variable). FS,FG,and CFO are firm size, firm growth, and operating cash flow (control variables),respectively.

Results of the hypothesis testing for each of the years 2004 to 2009 (annual method) individually, being presented in table (5),indicate the confirmation of the hypothesis at a confidence level of 95 percent in 2004,2006,2008,and 2009, and its rejection in 2005 and 2007. Further, the type of relationship between dependent and independent variables is inverse in 2005, 2004,2006,2008,and 2009,however, in 2007 though the confidence level is 95 percent, the hypothesis is rejected due to a direct relationship between the variables.

*Table (5)-results of the hypothesis testing in Annual (cross-sectional) method:

2009	2008	2007	2006	2005	2004	description
7.97 (0.041)	10.10 (0.011)	22.31 (0.000)	14.04 (0.000)	12.31 (0.084)	11.1 (0.000)	t-statistic(p-value)
-0.97	-0.28	0.63	-.88	-0.28	-0.37	Coefficient
0.407	0.841	0.551	0.674	0.368	0.784	Adjusted r-squared
confirmed	confirmed	rejected	confirmed	rejected	confirmed	Confirmation or rejection

*source: results of the study

Results of the hypothesis testing through pooled data method and OLS regression model are as well as presented in table (6).

As seen, the results of research using pooled data analysis confirm the study hypothesis.

Results of findings related to the hypothesis are consistent with the results by Bhattacharya and Graham (2006), and Chung et al (2002), however inconsistent with Banshee et al (2007).

*Suggestions: based on the results of the present study, major shareholder monitoring in companies listed in TSE is significantly associated with EM, according we recommend the following :

*Practical suggestions: 1-it is recommended that investors focus their investment decision criterion on information presented in firms audited financial statements and investigations by financial analysis and TSE brokers and choose their optimal portfolio

*Table (6)-results of the hypothesis testing in pooled data method:

$EM_{I=1.....N}=A_0+A_1OBH+A_2FS_{IT}+A_3FG_{IT}+A_4CFO_{IT}+E_{IT}$ testing model (5-1)	description
2004-2009	Time period
10.63 (0.000)	t-statistic (p-value)
0.69-	Coefficient
330	Number of observations
0.491	Adjusted R-squared
confirmed	Hypothesis confirmation or rejection
inverse	Type of relationship

*source: results of the study

accordingly. Moreover, TSE brokers are recommended to guide investors in choosing an optimal portfolio so that they avoid making decisions driven by emotional processes 2-the government and the Audit organization are recommended to develop some regulations and standards for better monitoring the firm management behavior in selecting various methods and government regulations, which could lead to earnings manipulation and providing unrealistic statement on them. In the process of developing audit standard by Audit organization in Iran, there is no clear literature or definition regarding EM. Moreover, despite final decision is left to the managers and they are free to choose among different methods. It would be better to develop these instructions such that they control the management behavior as much as possible 3-Also,TSE is recommended to in addition to corporate profitability index, consider another index in decisions made by the supreme council of TSE, such as decisions on how the companies are listed in the stock market, since earnings are subject to manipulation and distortion

*Suggestion for future research:

(A) An investigation of the impact of major shareholder monitoring on EM using Jounces model and other methods proposed for measuring EM

(b)- IN the present study, the influence of major ownership of shares on EM has not been examined in different industries individually. We recommend that the association of major ownership of share with EM be investigational in different industries, separately.

(c)- carrying out a study with the same subject, however in order to increase the reliability of the results, the number of observations for each section (number of firms) and time period should be increased.

*Research limitations;

By expressing the research constraints, we can avoid false perceptions and incurrent judgments. The main limitations of the present study are described below:1-non-adjustment of financial statement items due to the presence of inflection, that could be effective on the results.

2-lack of control over some factors affecting the results, such as economic factors, political conditions, global economy status, value and regulations, and etc, since they were out of the researchers control and may be effective on investigating the relations.

3-Due to some selection criteria (as fiscal year leading to the end of march, no changes in fiscal year, etc) in selecting companies as well as incomplete data on some companies, the number of the sample companies was reduced. Therefore, we ought to cautious about generalizing the results of the present study to other companies. Further, due to difficulties in accessing data required by the sample companies in 2005 and prior to that, time domain of the study was restricted to (2001-2008).

*Summary and conclusion:

For the hypothesis testing firstly dependent and independent variables of the study were calculated and tested using cross-sectional data analysis for each year separately. Then, the method of total pooled data econometric was used through applying a sample consisted of 55 companies listed in TSE (Tehran stock exchange) during (2004-2009). OLS liner regression was used to test the significance of the study at %5 error level in total pooled data method indicate the confirmation of the hypothesis. Thus, major monitoring in companies listed in TSE has been effective on EM. Results of findings related to the hypothesis are consistent with those by Bhattacharya and Graham (2006), and chug et al (2002), however inconsistent with results by Banshee et al (2007). In addicting results of the hypothesis testing over the studied year indicate the confirmation of the hypothesis in 2004,2006,2008,and 2009 with %95 confidence level while rejecting it in 2005 and 2007.

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