Investigating the Relation between Earnings Management and Information Asymmetry of the Listed Companies in Tehran Stock Exchange

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Abstract

The purpose of this paper is to investigate the association among earnings management and information asymmetry of the listed companies in Tehran stock exchange. All listed companies in Tehran stock exchange were selected as statistical population during 2008 to 2012 which 312 were picked up based on systematic omission as statistical population and 72 firms were selected as statistical samples through simple random sampling method. Information asymmetry, earnings management, and firm size, firm age and financial leverage are considered as dependent, independent and control variables of the study. The results indicated that there is a negative and significant relation between earnings management and information asymmetry of the listed companies in Tehran stock exchange.

Key words: Earnings management; information asymmetry; Tehran stock exchange.

Introduction

Information asymmetry is the major factor in directing managers toward earnings management (Rahmani et al, 2011). To illustrate the relation between information asymmetry and earnings management based on real activities, the origin of information asymmetry should be more addressed. The major origin of information asymmetry comes back to investment opportunities and firms' growth and another reason is located in the origin of data collecting and reporting by managers. Information asymmetry motivated by growth and investment opportunities enables managers to manipulate financial statements in order to move resources toward themselves through own exchanges and adding and compensation benefits. Of course, these efforts are costly, because they divert management activities from maximization firm value and create agency costs (Graham et al, 2005). Hence, Thomas & Zhang (2002) have addressed real manipulation through additional production. According to the obtained results, managers produce more than required level of sale and normal level of inventories which leads to decreased cost price of sold item and increased profits. The results of Graham et al, (2005) demonstrates prefer real activities manipulation to accounting report manipulation, even though it impairs future firm performance. Yo's findings (2008) indicate that highly motivated firms manipulate real activities more than other firms for earnings management. Furthermore, the results of his research show that real activities manipulation may impair firms' economic value in a long-term period. Zhang (2008) indicated that the firms which reach to their exact forecasts about cash flows may use real activities manipulation more than other firms in order to swelling cash flows. The goal of this research is to examine the relation between earnings management and information asymmetry of the listed companies in Tehran stock exchange.

Research Methodology

Research Method

• There is a negative and significant relation between earnings management and information asymmetry of the listed companies in Tehran stock exchange.

Statistical population and sample

All listed companies in Tehran stock exchange were selected as statistical population of the study during 2008 to 2012. The statistical sample will be selected based on systematic omission with the following condition:

- Their fiscal year ends in 19/3/…
- They should have been listed in Tehran stock exchange before 2008.
- They should not be part of intermediary, investment, leasing and insurance companies.
- Their information should be available.

312 companies were selected among 417 listed companies in Tehran stock exchange through selection systematic omission, and 72 companies were finally selected through Cochran method.

$$n = \frac{n(z_1 - \frac{a}{2})^2 a^2}{(n+1)d^2 + (z_{1-\frac{a}{2}})^2 a^2}$$

Z1 is confidence level in 95%, N= Population volume, d= sampling error and σ^2= population variance.

Regression Model

$$Earnings\ Managemenet_{it} = y_0 + y_1 Information\ Asymmetry_{it} + y_2 Size_{it} + y_3 Age_{it} + y_4 Leverage_{it} + \epsilon_{it}$$

Operational definition of the variables

Table 1: Way of measuring the variables

Variables' name	Way of measuring
Earnings management	In this research, the modified Jones model is used to measure earnings management, because this model is able to solve the current problem. The model is as follow (Ghalibaf Asl et al, 2010): $$\frac{TAC_{it}}{TA_{it-1}} = a_0\left(\frac{1}{TA_{it-1}}\right) + \frac{a_1(\Delta REV_{it} - \Delta REC_{it})}{TA_{it-1}} + a_2\left(\frac{PPE_{it}}{TA_{it-1}}\right) + e_{it}$$ TACit= Total accruals (income before unexpected item minus operational cash flow) in the year t for tge firm i ΔREVit: changes in incomes during the year t-1 to t fir the firm i ΔRECit= accounts' and receivable documents' changes during the years t-1 to t fir the firm i PPEit= The gross amount of items, machinery and equipment's in the year t for the firm i
Information asymmetry	This term is a qualitative concept. We need a model to put them in a facts and digits framework in order to describe it quantitatively. To do this, we use bid and sell domain price. As well, we apply Nektash & chiang (1986) model to measure information asymmetry in order to determine bid and sell domain price.
Firm size	Natural logarithm of book value of assets (Heidarpour et al, 2013).
Firm age	Number of listed years in Tehran stock exchange (rezaei, 2010)
Financial leverage	Total debt to total assets ratio (rezaei 2010).

Data analysis method

In this investigation, we firstly examine descriptive statistics of the research's variables based on index of dispersion and central indices. We use simple linear regression test to test the first hypothesis in order to confirm/reject it. As well, Kolmogorov-Smirnov (K-S) test is used to examine the normality of data; finally t-test with two independent samples is applied. If distribution of data is abnormal, nonparametric Wilcoxon test will be used.

Results
Data normality

Table 2: Kolmogorov-Smirnov test for examining data normality

Variables	Normal parameters		Maximum difference			z-value of kolmogorov-smirnov	probability
	Mean	SD	Absolute Value	Pos.	Neg.		
Earnings management	4.058	1.914	0.215	0.069	0.312	1.625	**0.096**
Information asymmetry	0.517	0.204	0.332	0.147	0.014	1.336	**0.075**
Under investment	0.558	0.212	0.214	0.025	0.226	0.748	**0.152**
Over investment	0.893	0.455	0.362	0.116	0.114	1.262	**0.096**
Firm size	27.41	2.361	0.214	0.291	0.112	0.925	**0.123**
Financial leverage	0.61	0.19	0.519	0.132	0.187	1.341	**0.076**
Firm age	**8.21**	**0.63**	**0.264**	**0.281**	**0.048**	**1.057**	**0.102**

5% error level

Regarding table 2, due to significance level of the variables is more than 0.05, H0 (normality of data) is confirmed.

The research's hypothesis test

Table 3: Regression and significance level

Variables 's name	Non-standardized estimated coefficients	Coefficients of estimation deviation	Standardized estimated coefficients	t-statistics	Significance level
Fixed effects	1.623	0.241	-	6.734	*0.014
Earnings management	0.548	0.316	0.265	1.734	0.082
Firm size	6.926	0.514	0.748	12.249	*0.000
Financial leverage	0.551	0.109	0.226	50.506	*0.021
Firm age	0.369	0.087	0.552	4.241	*0.039
Durbin-Watson	2.116				
F-statistics	74.036				
Significance level	**0.000				
Adjusted R²	0.748				

* 5% error level and *** 1% error level

Regarding the table 3-1, since Durbin-Watson statistic test value is determined among 1.5 to 2.5, there is no correlation between errors and regression can be used. The independent variable of earnings management has positive and direct

impact on coefficient of estimation. If earnings management is increased in a firm, the information asymmetry would be increased. Regarding significance level of t-statistics in 5% error level, the relation is not significant. It can be said that there is no negative and significant relation between earnings management and information asymmetry of the listed companies in Tehran stock exchange. The independent and control variables of the research can predict 74.8% of changes, and significance level of F-statistic indicates that the research's model is significant in 1% error level.

Conclusion and Suggestions

Briefly, regarding the research's regression model, it can be said that there is no negative and significant relation between earnings management and information asymmetry of the listed companies in Tehran stock exchange. Hence, the researches of Ahmadpour Kasgari & Ajam (2010) indicated that accruals quality of the listed companies in Tehran stock exchange would not significantly impact on information asymmetry. In a different research (2013), they shown that there is a direct association between information asymmetry and abnormal cash flow and production, but no observation was made significant relation among information asymmetry and abnormal non-discretionary costs. In contrast, Rahman et al, (2013) concluded that there is an adverse and negative association between earnings management and information asymmetry. According to the obtained results:

1-It is recommended that investors, shareholders and other stakeholders should pay their attention to firm's investment and investment in underinvestment firms as they want to make decisions about investment (stock trading), because capital cost is lower in these firms and they faced with less risk levels, according to the research of Omnek et al, (1996).

2-It is suggested to firms' managers to apply suitable policies and tools to decrease earnings management in firms in order to provide all people with information which finally leads to decreased information asymmetry and persuade investors to invest, because they can make a more reasonable decision in this situation.

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