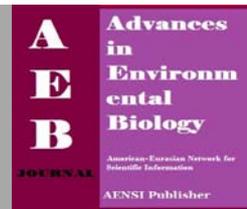




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Impact of Earnings Management on Discretionary and Non-Discretionary accruals

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ABSTRACT

Aim of this study was investigating impact of earnings management on quality of financial report in companies listed in Tehran Stock Exchange. Furthermore, we tested role of debt ratio and size of firm in the relationship. Therefore, we used modified Jones model [10], discretionary accruals as measure for earnings management also we used model of Francis and et al (2005) in order to test quality of financial reports. Sample study included 80 companies listed in Tehran Stock Exchange during 2008 and 2012. We used multiple regressions in order to test variables. Results indicated that reverse relationship exists between earnings management and both discretionary and non-discretionary accruals. Finally, results indicated that there was not significant relationship between debt ratio with both of discretionary and non-discretionary accruals.

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INTRODUCTION

Effective transfer of financial information to people outside the organization in a timely and valid manner is the main role of financial reporting. One of the basic objectives of accounting standards is that users with relying on the financial statements are able to make correct decisions. On the other hand managers to achieve certain goals, provide the benefits of special people logically, report earnings so that it is inconsistent with the purpose of public benefits of users. Accounting standards in some of cases will open the managers to choose accounting methods. Performing researches show appropriate evidence on earnings management in different situations. The problem is the fact that earnings management sometimes confuses financial statements while financial statements do not have any problem in the context of accounting standards and auditors can't be wrong of financial statements about this opinion.

Companies have wide variety of backgrounds and motivations to manipulate profits, for example: showcasing a good picture of the financial statements before public securities of portfolio, compensating managers and avoiding providing information that indicate a violation of loan contracts and ordering actions that produce by manipulating results. In recent decades, the results of the performing investigation indicate increasing trend of earnings management. Based bonus plans and stock options have appeared especially in recent years that having a high predictive power prediction with audacious accounting practices.

Literature review:

Earnings Management:

In recent decades, many studies have been done in the context of earnings management. Most studies are discussed on identifying the motives, means and factors affecting earnings management. Several explanations from different perspectives on earnings management have been offered. From Healy & Wahlen [9] point of view, earnings management occurs when managers use their own judgment for financial reporting and do this act aimed to confusesome shareholders about the true economic performance or to influence the outcome of the contracts based on reported accounting numbers. From Degeorge *et al* point of view, earnings management is a kind of artificial manipulation of earnings to reach the expected level of profits for some specific decisions (such as analysts' forecasts and trend estimation of previous profits for predicting future profits). In fact the main motivation for earnings management is belief management of investors about business unit.

In order to measure earnings management, it is necessary to consider the methods used by managers to manage reported earnings. The methods of measure earnings management generally assume that the reported profits through a change in accounting methods the timing of real investment and financial decisions or managerial discretion on accruals are managed.

In a general classification, models that can detect and measure earnings management measures can be considered in two groups: the first model is based on discretionary accruals including arbitrary discretionary accruals and specifically discretionary accruals and the second model is non-discretionary accruals including distribution model, accounting changes model, Eckel model and Red Flags model [7].

Dechow et al evaluated the relative performance of the five models of earnings management measure included Healy DeAngelo Jones [3] modified Jones model and the Industry model. The results indicate that the Modified Jones model is the most robust criterion in earnings management detection. Bartov et al [1] also claimed that the Jones model and modified Jones model are able to detect earnings management. Chang et al also evaluated that the cross sectional Jones model is better than the time series modified Jones model.

In the accounting literature, many studies related to earnings management have focused on identifying factors affecting on earnings management only. It means these have assessed the only relationship between earnings management and ranges of factors. Developing of information technology and making the ability to collect and store data at extremely high volumes in most organizations requires the necessity to develop theories and tools to assist human in extracting useful information (knowledge) from the rapidly growing volumes of digital data. Due to the high potential of Artificial Intelligence in the processing of large databases and finding complex and nonlinear models in them, much researches has been made in the field of artificial neural networks in different areas. Financial decisions because of partly turmoil nature of effective variables are suitable for using the artificial neural networks. Therefore the aim of this study is that by using the techniques of the artificial neural networks and logistic regression offer a model for detecting earnings management in listed companies in Tehran Stock Exchange and the results of the two techniques is compared. The main research question is that whether the use of these techniques such a model will be presented or not and finally which techniques provide a better model. The paper outlines and discusses issues and research background is provided. Then the research method is described. Research findings will form the next article topic. Finally, conclusions and recommendations are presented

MATERIALS AND METHODS

This research has been conducted on companies listed in the Stock Exchange between years 2006 and 2012 that have the following conditions:

- 1) Company should be listed on Tehran Stock Exchange from the beginning of financial year of 2006.
- 2) Sample companies would not be among financial (banks) and investment companies.
- 3) Sample companies have not been stopped during 2006 to 2012 permanently.
- 4) Sample companies have not been changed their financial year during 2006 to 2012.

In this study, in order to collect data, directly use financial statements of companies, attached notes and stock trading reporting. Initial processing of the data was performed by using excel and SPSS and Clementine SPSS statistical software was used for analysis.

Hypotheses:

- H1: Significant relationship exists between earnings management and accruals.
 H2: Significant relationship exists between earnings management and discretionary accruals.
 H3: Significant relationship exists between earnings management and non-discretionary accruals.

Independent Variable:

Earnings management: Studies related to earnings management mostly related to accruals. Wide literatures of discretionary accruals have been used as a tool for measuring earnings management. Various methods of measuring accruals have been declared like Healy (1985), Jones (1991), and modified Jones's model (1995). Thus, we used discretionary accruals of Dechow and et al [4] which is known as modified Jones models.

Before fitting modified Jones model and Jones should be calculated all accruals. All accruals can calculate by using the balance sheet approach and an income approach. The income approach is used in this research are as following:

$$TA_{it} = EARN_{it} - CFO_{it}$$

$$TA_t = \text{Total accruals}$$

$$EARN_t = \text{Income before extra ordinary items}$$

$$CFO_t = \text{Operating cash flow (cash flows from operational activities)}$$

Then Jones models and Jones, moderated by discretionary accruals and the fitted regression non-discretionary accruals following is obtained:

Jones's model:

$$NDA_{it} = \alpha_{it1} \left(\frac{1}{A_{it-1}} \right) + \alpha_{it2} \left(\frac{\Delta REV_{it}}{A_{it-1}} \right) + \alpha_{it3} \left(\frac{PPE_{it}}{A_{it-1}} \right)$$

In this model:

NDA_{it} = Non-discretionary accruals in year t,

ΔREV_{it} = Change in annual income (the difference between the incomes of any year of income beginning of the year)

PPE_{it} = Gross property, plant and equipment in year t

A_{t-1} = Total assets at year t-1,

Parameters $\alpha_1, \alpha_2, \alpha_3$ estimation period is estimated using the following model:

$$TA_{it} / A_{it-1} = \alpha_{it1} \left(\frac{1}{A_{it-1}} \right) + \alpha_{it2} \left(\frac{\Delta REV_{it}}{A_{it-1}} \right) + \alpha_{it3} \left(\frac{PPE_{it}}{A_{it-1}} \right) + \varepsilon_{it}$$

The above equation shows the estimated parameters of $\alpha_1, \alpha_2, \alpha_3$ by using method of least squares and

TA_t is total accruals in year t which is measured on the basis of total assets in year t

Finally, discretionary accruals based on Jones model, is calculated as following:

$$DA_t = \left(\frac{TA_t}{A_{t-1}} \right) - NDA_t$$

Modified Jones's model:

$$TA_{ijt} / A_{ijt-1} = \alpha_{ijt1} \left(\frac{1}{A_{ijt-1}} \right) + \alpha_{ijt2} \left(\frac{(\Delta REV_{ijt} - \Delta REC_{ijt})}{A_{ijt-1}} \right) + \alpha_{ijt3} \left(\frac{PPE_{ijt}}{A_{ijt-1}} \right) + \varepsilon_{ijt}$$

ΔREC_{ijt} = Change in accounts receivable (difference between the accounts receivable accounts receivable at the beginning of the end of each year, the same year)

$\alpha_1, \alpha_2, \alpha_3$ = Model coefficients

ε_t = Error Model

i = Industry

j = Sample of firms in industry i

The discretionary accruals obtained from the following equation to do:

$$DA_t = \left(\frac{TA_t}{A_{t-1}} \right) - NDA_t$$

Dependent Variable:

$$TA_{it} = \alpha_1 \left(\frac{1}{A_{it-1}} \right) + \alpha_2 \left(\frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} \right) + \alpha_3 \left(\frac{PPE_{it}}{A_{it-1}} \right) + \varepsilon_{it}$$

$$DNA_{it} = TA_{it} - \alpha_1 \left(\frac{1}{A_{it-1}} \right) + \alpha_2 \left(\frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} \right) + \alpha_3 \left(\frac{PPE_{it}}{A_{it-1}} \right)$$

Controlling Variables:

Size: Total Natural Logarithm of assets

Debt Ratio: We calculate the debt ratio as long-term debt as a percentage of total capital [LTD / (LTD + Equity)].

Results:

Table 1: Regression's results of modified Jones's model.

Variables	Coefficients	T	P	F	P-value	Durbin- Watson
	0.111	3.517	0.000	292.220	0.000	1.942
	0.665	18.963	0.000			
	0.050	-3.580	0.000			

Table 2: Results of Francis and et al regression.

Variables	Coefficients	T	P	F	P-value	Durbin- Watson
Intercept	-674254.705	-8.573	0.000	21.122	0.000	1.655
Size	54180.312	8.626	0.003			
Sd of Cash Flow	-0.031	-2.046	0.893			
Sd sell	-0.002	-0.952	0.000			
Sdlossess	-5211.124	-0.124	0.041			

Table 3: Results of Dechow and Dichev Regression.

Variables	Coefficients	T	P	F	P-value	Durbin- Watson
Intercept	57962.092	7.531	0.000	782.795	0.000	1.717
	0.064	3.244	0.000			
	-0.473	-26.765	0.000			
	0.451	22.709	0.000			
	0.342	22.412	0.000			
	-0.258	-21.509	0.000			

Table 4: Results of analyzing regression.

R	0.365
R ²	0.134
R ² _{adj}	0.13
Durbin-Watson	2.027

Table 5: ANOVA test.

	Coefficients	df	R-square	F	P-value
Regression	5.629	3	1.407	35.419	0.000
Residual	3.651	476	3.973		
Total	9.28	479	-		

Table 6: Results of analyzing regression.

R	0.938
R ²	0.879
R ² _{adj}	0.879
Durbin-Watson	1.732

Table 7: ANOVA test.

	Coefficients	df	R-square	F	P-value
Regression	3.069	3	7.672	1675.087	0.000
Residual	4.209	476	4.580		
Total	13.278	479	-		

Conclusion:

Results of the research based on data related to 80 companies listed in Tehran Stock Exchange during 2008 and 2012 as follow:

Based on results of the first hypothesis; reverse and significant relationship exists between earnings management and discretionary accruals as indicator of financial report quality. Following, higher earnings management leads to decline quality of financial reports. Results of the second hypothesis showed that there is a significant and reverse earnings management and non-discretionary accruals. In order to managers have alternatives of manipulating earnings management; we have to consider controlling variables like size of firm and debt ratio. Results show that significant relationship exists between size and discretionary and non-discretionary accruals, therefore, it indicates that institutions prepare accounting rules more pay attention to big companies. Meanwhile, there is not significant relationship between debt ratio and accrual qualities.

In according to above mentioned, earnings management has negative impact on quality of financial reports. Results of this research are inconsistent with results of researche's Bahareh Moghadam and Kohi (2010) indicated that earnings management has positive impact on quality of financial reports.

Recommendations:

In according to results of this research; reverse and significant relationship exists between earnings management and quality of financial report. Therefore, stock exchange organization and other institutions of accounting rules must be suggested the rules should be more efficient. Finally, in according to this research; we used accruals quality as indicator of financial reporting quality. It is proposed that following research use other indicator of financial reporting quality.

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