

*Full Length Research Paper*

# The effect of earnings management on the quality of financial reporting

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**The accuracy of predicting future operating cash flows and the stability of accounting profit were the indices applied in defining the quality of financial reporting. The hypotheses of the study were tested through the panel data gathered from 70 listed companies in Tehran Stock Exchange. The findings of the research indicated that earnings management through accruals decreased the quality of financial reporting, that is, the purpose of performing earnings management was to misstate and distort financial reports and managers performed it to opportunistically benefit themselves since earnings management decreased the accuracy of predicting future operating cash flows. However, earnings management had no effect on the persistence of accounting profit.**

**Keywords:** Earnings management, opportunistic earnings management, Kaznic model, adjusted Barth model, and predicting persistence of accounting profit model.

## INTRODUCTION

Financial reporting, if enjoys a required quality, will assist the users to make right decisions. The right decisions then will lead to optimum allocation of resources that plays a significant role in any country's economic success.

In financial reporting, financial performance is mainly evaluated based on the information received on earnings and its components. It is said with no doubt that the objective of accounting, considering the deductive reasoning, is to define the earnings, that is, the rest objectives of accounting are determined in the framework which defines the earnings, since earnings is the return on investment (capital). If accountants are asked why they measure assets, liabilities, income, expenses and so on, they will generally provide one unique response; to define the earnings. Thus, defining the earnings is considered to be the gravity centre in accounting (Tariverdi, 2007).

Choosing earnings as a performance index may be influenced by the management implementing his/her own opinion. On the one hand; this may be a symptom of management's incentive for opportunism to satisfy personal benefits which is called opportunistic manipulation. On the other hand, managers having the access to the companies' classified information may impose their personal opinions on the companies' accounting practices in order to transfer their own information to the users of financial reports. The latter amplifies the informative content of accounting profit which reduces dissymmetry of information between the management and users of financial reports, and also increases the value of financial reporting regarding its relevance.

Earnings management is the choice by a manager of accounting policies so as to achieve some specific objective (Scott, 1997). Therefore, the informative quality of financial reporting will be increased if the scope of management's imposing of opportunistic opinion is limited. This is achieved by setting accounting standards and also considering the role of auditors in giving validity to financial reports. In return for the expenses paid by the users, including auditing expenses, they wish to limit the

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scope of opportunistic decisions imposed by the management. Thus, the process of defining the earnings is the result of balance between two attributes; relevance and reliability (Mehrazin, 2008).

The objectives pursued by financial reporting make it clear that information provided by financial reports should possess a set of specified attributes. Relevance and reliability are two attributes which make financial information helpful. It is usually impossible to reach the maximum level of these two attributes. So, based on the conceptual framework of financial reporting used in Iran, the goal is to reach a kind of balance between characteristics of relevance and reliability (Conceptual Framework of Financial Reporting, 2007, par 2-31; Accounting standards, 2007).

According to the conceptual framework set by FASB (Financial Accounting Standards Board) in the U.S, the purpose of financial reporting is to provide information which helps users in making right decisions (FASB Conceptual Statement No.1, 1978). This is considered as a criterion for assessing the quality of earnings. One purpose of reporting the earnings is to predict future operating cash flows for the users of financial statements. Regarding this, people seek a kind of quality of earnings by which they are able to estimate future operating cash flows and if the reported earnings by an entity enjoy high quality, more people will apply it in their decision. Also, as Richardson mentions, more earnings persistence brings the higher quality. Based on theory and conducted studies, earnings persistence brings reaction of investors to the extent that they consider this kind of earnings as a basis for applying a shortcut method of valuation. Considering the FASB's emphasis on the usefulness of information and the results of conducted studies, it is believed that for those who apply the results of financial reports in their decisions and transactions, earnings quality, and more generally the quality of financial reporting is of great importance. Also, those bodies who set accounting standards indirectly apply earnings quality as an index for assessing the quality of financial reporting standards (Shourvarzi, 2009).

This study represents the effect of earnings management on the quality of financial reporting. The accuracy of predicting future operating cash flows, as well as persistence of accounting profit which are earnings quality criteria by themselves, are considered as the indices for defining the quality of financial reporting. Earnings management, if aimed at opportunistic manipulation, will reduce the accuracy of predicting future operating cash flows and the persistence of accounting profit. However, if the purpose of earnings management is to transfer classified information to the users of financial reports, it will increase the accuracy of predicting future operating cash flows as well as the persistence of accounting profit. Regarding the above mentioned points, the following two questions are put forward:

1. What kind of effect does earnings management have

on the accuracy of predicting future operating cash flows?

2. What kind of effect does earnings management have on the persistence of accounting profit?

## LITERATURE REVIEW

Lev (2003) investigates the relationship between earnings management and some kinds of violations. In his study, he presents the question that whether those companies not complied with accounting principles and legally prosecuted by their shareholders had manipulated the earnings. The results of his study indicate that the incidence of changes and increases in earnings are abnormally so high during the periods of legally trial (Nahandi, 2009). Mashayekhi et al. (2005) investigates the role of discretionary accruals in earnings management of listed companies in Tehran Stock Exchange. The purpose of the study is to understand why managers pursue earnings manipulation. The results show the implementation of earnings management in the surveyed companies. In fact, when the amount of operating cash is reduced (entity's fragile performance), the managers increase the earnings through discretionary accruals in order to compensate the case.

Demerjian et al. (2006) study and test the relationship between management's capability and quality of financial reporting. By creating a model which measures management's capability, and also separating management's specific effects from entity's specific effects, they try to identify management's specific effects. The results of their study indicate that the quality of financial reporting has a positive relation with management's capability. The above mentioned finding is in alignment with the general idea that competent and capable managers are more capable of estimating the accruals. Tucker and Zarowin (2006) investigate whether income smoothing mis-states earnings information or increases the informativeness that current earnings provide about future earnings and cash flows. The results show that the degree of management's authority in financial reporting can clarify more information about future earnings and cash flows. Also, the results reveal that income smoothing increases earnings persistence.

Also, Haghghat and Raygan (2008) examine the issue proposed by Tucker and Zarowin (2006) in the environment of Tehran Stock Exchange, yet the results of their research are in contrary with that of Tucker and Zarowin's. The results emphasize that income smoothing misstates earnings information and it does not increase earnings persistence. Based on the results of these two studies it can be concluded that, quite opposite to stock market of America, income smoothing in Tehran Stock Exchange is rather done to misstate financial information Mehrani and Arefmanesh (2008) review income smoothing for the listed companies in Tehran Stock Exchange. Their research provides some evidence about

the characteristics of the companies which their managers smooth the income by applying accruals. The results show that compared with non-smoothing companies, smoothing companies showing weaker performance, having more incentive and bigger discretionary accruals, have more opportunity to smooth income.

In their research, Jahmani et al. (2010) investigate whether FASB Standard No. 142, Goodwill Impairment, introduces a new method of earnings management. The outcomes of their study show that most of those companies which report loss in consecutive three or two years, do not recognize the impairment of goodwill. Furthermore, there are some reassuring evidences which indicate that most of those company which report 2% or less for the return on their investments in consecutive three or two years, do not recognize the impairment of goodwill. Therefore, it can be concluded that FASB standard No. 142 creates an opportunity for managers to manipulate earnings.

Baharmoghadam and Kouhi (2008) study the type of earnings management for listed companies in Tehran Stock Exchange. To examine the effectiveness or opportunism of earnings management, they test the relationship between earnings management and future profitability. Moreover, five earnings management models, that is, Jones Model (1991), Jones Adjusted model (1995), Kaznic Model (1999), and also modified models of Adjusted Jones and Kaznic by changes in inventory, s variable are compared in their study. The results show that earnings management in Tehran Stock Exchange has a tendency towards efficiency. Also, the results of comparing different models indicate that in the economic environment of Iran, first Adjusted Kaznic model and then Kaznic model show the highest predictive power of measuring earnings management. The capability of Jones model and also Adjusted Jones model in true classification of accruals into discretionary and non-discretionary is questionable and therefore, the possibility of inappropriate classification of accruals into discretionary and non-discretionary is quite probable.

## Research hypotheses

1. Earnings management decreases the accuracy of predicting future operating cash flows through the components of operating earnings (earnings management is of opportunistic type).
2. Earnings management decreases the persistence of accounting profit (earnings management is of opportunistic type).

## METHODOLOGY

### Sample selection and data

The study covers a period of ten years (2001 to 2010) and reviews the financial statements and the accompanying notes issued during

the period. However, the study period is practically limited to eight years, since in testing some of the models applied in the study we need to measure the changes happening in year  $t$  in comparison with year  $t-1$ , or in some applied models, the relationship between variables in year  $t$  and year  $t+1$  should be examined. Since accounting standards were effective in 2001, we select this year as the commencement period.

The information society includes listed companies in Tehran Stock Exchange and statistical sampling includes those companies which enjoy the following criteria:

- 1) The company must be listed in Tehran Stock Exchange from 2001 to 2010.
- 2) The company should not be of investing, financial brokerage or insurance type, as in these companies earnings manipulation is rather done through sales of investments and other types of available methods than discretionary accruals.
- 3) There should not be any pause in the company's transactions during the period between 2001 and 2010, and during the mentioned period, the company's stock should be traded and active in the market. The company's transaction interval should be equal or more than zero day and less than six months ( $0 \text{ day} \leq \text{transaction interval} < 6 \text{ months}$ ).
- 4) The company's fiscal year should end in 19<sup>th</sup> of March.
- 5) The company's fiscal year should not be changed during the time period between 2001 and 2010.
- 6) The company's audited financial statements and accompanying notes should be available for review.

After considering the above mentioned criteria, 69 listed companies are included in our statistical sample. Pars Khodro Company enjoys all the criteria except one that in 2001 and 2002 its shares were not traded in the market. But for the rest of the periods, its transaction interval is not greater than three months ( $0 \text{ day} \leq \text{transaction interval} < 3 \text{ months}$ ). Hence, it is added to the statistical sample and finally our study sample comes to 70 listed companies.

## Research variables

### Model applied in measuring earnings management

In order to test the hypotheses, two models are examined (Kaznic model and Adjusted Jones model) and the one which shows higher level of dependent variable to be explained by independent variables (more  $R^2$ ) is chosen. Based on the results, Kaznic model is applied for measuring earnings management.

In addition, based on the study conducted by Baharmoghadam and Kouhi, Reviewing the Type of Earnings Management for the Listed Companies in Tehran Stock Exchange, Kaznic model can be considered as a model suitable for measuring earnings management in the environment of Tehran Stock Exchange.

### Kaznic Model (1999)

The difference between Kaznic model and Adjusted Jones model is that in Kaznic model, changes in operating cash flows variable is used as an independent variable as well. Kaznic model is as follow:

$$TAit/At-1 = \alpha_0 (1/At-1) + \alpha_1 [(\Delta REViPt - \Delta ARi,t) / At-1] + \alpha_2 (PPEit/At-1) + \alpha_3 (\Delta CFOit / At-1) + eit.$$

Where  $\Delta REVi,t$  is the revenue in year  $t$  subtracted by the revenue in year  $t-1$ ;  $\Delta ARi,t$  is the net of accounts receivable in year  $t$  subtracted by the net of accounts receivable in year  $t-1$ ;  $PPEt$  is the gross value of properties, plants and equipments in year  $t$ ;  $At-1$  is the assets in period  $t-1$ ;  $\Delta CFOit$  is the changes in operating cash

flows in year  $t$  subtracted by the operating cash flows in year  $t-1$ . (Kaznic, 1999)

### **Models applied in measuring the quality of financial reporting Barth et al. model (2001)**

In this model, the accuracy of predicting expected future operating cash flows from accounting profit is considered as the quality of financial reporting index. For measuring the accuracy empirically, residuals of regression of predicting operating cash flows through previous period's earnings components are applied. In this study, the attained residuals from estimating the following regression model are used as the basis for measuring the quality of financial reporting:

$$CFO_{i,t+1} = \alpha_0 + \beta_1 CFO_{i,t} + \beta_2 \Delta AR_{i,t} + \beta_3 \Delta INV_{i,t} + \beta_4 \Delta API_{i,t} + \beta_5 DEPR_{i,t} + \beta_6 OTHER_{i,t} + \varepsilon_{i,t}$$

Where  $CFO_{i,t}$  is the operating cash flows for  $i$  company in year  $t$ ;  $\Delta AR_{i,t}$  is the changes in accounts receivable;  $\Delta INV_{i,t}$  is the changes in inventory;  $\Delta API_{i,t}$  is the changes in accounts payable and deferred liabilities;  $DEPR_{i,t}$  is the depreciation expense of tangible fixed assets and amortization of intangible assets;  $OTHER_{i,t}$  is the net of other accruals which is measured as follow:

$$OP_{i,t} = (CFO_{i,t} + \Delta AR_{i,t} + \Delta INV_{i,t} - \Delta API_{i,t} - DEPR_{i,t})$$

$OP_{i,t}$  is the operating earnings;  $\varepsilon_{i,t}$  is the amount of error which is supposed to have a mean of zero (0) and a fixed variance.

All regression variables are presented as a ratio of the previous period's total assets. The absolute value of the residuals, that is,  $RES = |e_{i,t}|$ , is considered as the empirical criterion for measuring the quality of financial reporting. These residuals reflect the lack of relationship between future operating cash flows and current operating earnings. The smaller the size of the residuals, the higher is the quality of financial reporting. If the amount of residuals of the relationship between future operating cash flows and current operating income is equal or less than their median, the quality of financial reporting will be considered as one and if it is more than their median, the quality will be considered as zero (0). The mathematical form of the index is as follow:

$$FIRQ_{i,t} = 1 \text{ if } |e_{i,t}| \leq |et| \text{ median of the companies.}$$

$$FIRQ_{i,t} = 0 \text{ if } |e_{i,t}| > |et| \text{ median of the companies.}$$

To measure the quality of financial reporting, Barth model is applied. The model is modified as follow. In fact, the depreciation expense is deducted from operating cash flows.

$$CFO_{i,t} + 1 = \alpha_0 + \beta_1 (CFO_{i,t} - DEPR_{i,t}) + \beta_2 \Delta AR_{i,t} + \beta_3 \Delta INV_{i,t} + \beta_4 \Delta API_{i,t} + \beta_5 DEPR_{i,t} + \beta_6 OTHER_{i,t} + \varepsilon_{i,t}$$

### **Model for predicting future earnings persistence before unusual items through current earnings before unusual items**

This model shows the persistence degree of the current period's earnings if recurred for the future periods. The persistence then is achieved through the independent variable's coefficient, that is,  $\beta$ .

$$E_{i,t+1} = \alpha + \beta E_{i,t} + \varepsilon_{i,t}$$

Where;  $E_{i,t+1}$  is earnings before unusual items in year  $t+1$ ;  $E_{i,t}$  is earnings before unusual items in year  $t$ ;

All regression variables are presented as a ratio of previous period's total assets. If  $\beta$  is closer to 1, The quality of financial reporting will be equal to 1 (more earnings persistence). However, if

$\beta$  is closer to zero, The quality of financial reporting will be equal to 0 (less earnings persistence).

### **Control variable**

The size of company is the LN of the book value of the company's total assets. The variable is measured as follow:

$$SIZE = LN(A_{i,t})$$

## **RESEARCH FINDINGS**

### **Estimating the models of earnings management**

According to the results of estimating the regression models of Adjusted Jones and Kaznic, it is evident that Kaznic model - by showing a higher level of dependent variable to be explained by independent variables ( $R^2$ ) of 30.7%, while Adjusted Jones model shows just 4.7% - is a more suitable model for testing the hypotheses of the study Table 1.

### **Estimating the model of measuring the accuracy of predicting future operating cash flows through components of operating earnings**

Based on the results of estimating the regression model of Adjusted Barth, the summary of the model is presented as in Table 2.

### **Testing the research hypotheses**

#### **Regression model**

$H_1$ : Earnings management reduces the accuracy of predicting future operating cash flows through components of operating earnings (earnings management is of opportunistic type).

If the financial reporting is of high quality, the quality will be equal to 1, and if it is of low quality, the quality will be equal to 0. Logistic Regression method is applied since the dependent variable is of dummy type and the independent variables are of quantitative type.

According to Table 3, the significance level for earnings management is 0.009 (significant and negative), for company size is 0.02 (significant and positive) and for the constant is 0.048 (significant and negative).

Considering the results of testing the hypothesis 1, it can be stated with 95% assurance that earnings management has a significant and negative relation with accuracy of predicting future operating cash flows through components of operating earnings, that is, earnings management reduces the quality of financial reporting (earnings management is of opportunistic type). Also, the company size has a significant and positive

**Table 1.** Summary of the models.

Model	R <sup>2</sup>	Adjusted R <sup>2</sup>	Durbin watson
Adjusted Jones	0.047	0.042	1.630
Kaznic	0.307	0.302	1.159

**Table 2.** Summary of the model.

Model	R <sup>2</sup>	Adjusted R <sup>2</sup>	Durbin watson
Adjusted Barth	0.589	0.585	2.161

relation with accuracy of predicting future operating cash flows through operating earnings, that is, the bigger the company size, the higher the quality of financial reporting.

H<sub>2</sub>: Earnings management reduces earnings persistence (Earnings management is of opportunistic type):

According to Table 4, the significance level for earnings management is 0.211 (insignificant), for company size is 0.017 (significant and positive) and for the constant is 0.022 (significant and negative).

Considering the results of testing the hypothesis 2, it can be stated with 95% assurance that earnings management has no significant relation with earnings persistence. However, company size has a significant and positive relation with earnings persistence; that is, the bigger the company size; the higher quality of financial reporting.

### Testing the normality of data distribution among two groups of high quality and low quality companies, based on the accuracy of predicting future operating cash flows model

In order to compare the means of the samples, first, normality of the data distribution must be examined. In this study, Kolmogorov-Smirnov test is applied to test the data distribution. Null hypothesis and alternative hypothesis are as follow:

H<sub>0</sub>: The data enjoy a normal distribution

H<sub>1</sub>: The data do not enjoy a normal distribution

Since the significance level of **Z** in low quality society is equal to 0.000, and this amount is smaller than 0.05, H<sub>0</sub> is rejected, that is, the data do not enjoy a normal distribution Table 5.

### Comparing the means of earnings management in two groups of high quality and low quality companies, based on the accuracy of predicting future operating cash flows model

To compare two independent groups, test of comparison

the means of two groups should be applied, that is, the mean of earnings management for the companies with high quality financial reporting is compared with the one for the companies with low quality financial reporting Table 6. In this test, null hypothesis and alternative hypothesis are as follow:

H<sub>0</sub>: The means of earnings management in two groups of the companies are equal

H<sub>1</sub>: The means of earnings management in two groups of the companies are not equal

Since the data do not enjoy a normal distribution, non-parametric tests should be applied in order to compare the means of earnings management in two societies of high quality and low quality. In this study, both *t* Test (parametric) and U Mann Whitney Test (nonparametric) are employed to compare the means of the samples.

### *t* Test

Equal variances test should be applied prior to testing equality of means. According to the Table 7, Equal variances test has been applied by using Leven test (if the significance level of the test is less than 0.05, the Equal variances hypothesis is rejected, or else, it is accepted) and testing equality of means should be applied after conducting Equal variances test (In this study, testing equality of means has been applied under both Equal variances and no-Equal variances conditions).

According to Table 7, the probability of equal variances test is 0.069, that is, the variance of this variable is of homogeneous type. Therefore, under equal variances conditions, the significance level of *t* is equal to 0.007 which indicates that null hypothesis is rejected that is, two groups of high quality and low quality companies do not enjoy an equal mean of earnings management. The mean of earnings management in low quality companies is bigger than the one in high quality companies.

### U Mann Whitney test

Table 9 shows that the significance level of **z** is 0.004 which is smaller than 0.05. Therefore, null hypothesis is rejected; that is, the means of earnings management in two groups of high quality and low quality companies are not equal. The mean of earnings management in low quality companies is bigger than the one in high quality companies.

Considering the results of the test, it can be stated with 95% assurance that the mean of earnings management in high quality companies is not equal to the one in low quality companies Table 8. The mean of earnings management in low quality companies is bigger than the one in high quality companies, that is, earnings management reduces the quality of financial reporting.

**Table 3.** Independent variables' coefficients and significance levels.

Independent variable	Independent variable's coefficient	WALD Statistic	SIG	EXP (B)
Earnings management	-3.165	6.766	0.009	0.042
Company size	0.139	5.406	0.020	1.150
Constant	-1.593	3.924	0.048	0.203

**Table 4.** Independent variables' coefficient and significance level.

Independent variable	Independent variable's coefficient	WALD Statistic	SIG	EXP (B)
Earnings management	10.062	1.564	0.211	23444.324
Company size	0.650	5.733	0.017	1.916
Constant	-8.226	5.271	0.022	0.000

**Table 5.** Results of testing normality of the data in two societies.

Society	Z Statistic	Sig.
Low quality	2.083	0.000
High quality	2.549	0.000

**Table 6.** Comparing means of earnings management in two societies.

Society	Mean
Low quality	0.0887
High quality	0.0718

**Table 7.** The results of comparing means of earnings management in two societies.

	Leven test for equality of variances		t test for equality of means	
	f Statistic	SIG	t Statistic	SIG
Equal variances assumed	3.319	0.069	2.722	0.007
Not Equal variances assumed			2.722	0.007

**Table 8.** Comparing means of earnings management in two societies.

Society	Mean
Low quality	300.29
High quality	260.71

### Testing the normality of data distribution in two groups of low quality and high quality companies based on predicting the persistence of accounting profit model

In order to compare the means of the samples, first normality of distribution of the data must be examined. Kolmogorov- Smirnov test has been applied to test the

normality of data distribution. The null hypothesis and alternative hypothesis are as follow:

$H_0$ : The data enjoy a normal distribution

$H_1$ : The data do not enjoy a normal distribution

Since the significance level of  $z$  in the low quality society is equal to 0.505 and the amount is not smaller than 0.05,

**Table 9.** The results of comparing means of earnings management in two societies.

Earnings management	Z statistic	SIG
	-2.894	0.004

**Table 10.** The results of testing the normality of the data in two societies.

Society	Z statistic	SIG
Low quality	0.825	0.505
High quality	0.902	0.389

**Table 11.** Comparing means of earnings management in two societies.

Society	Mean
Low quality	0.0708
High quality	0.0837

the null hypothesis is not rejected, that is, the data enjoy a normal distribution. In the high quality society, as the significance level of  $z$  is equal to 0.389 and the amount is not smaller than 0.05, the null hypothesis is not rejected, that is, the data enjoy a normal distribution Table 10.

### Comparing the means of earnings management in two groups of low quality and high quality companies, based on predicting the persistence of accounting profit model

To compare two independent groups, test of comparison the means of two groups should be applied, that is, the mean of earnings management in companies with lower earnings persistence is compared with the one in companies with higher earnings persistence. The null and alternative hypotheses are as follow:

As the data enjoys a normal distribution,  $t$  test (parametric) is applied to compare the means of earnings

$H_0$ : The means of earnings management in two groups of the companies are equal

$H_1$ : The means of earnings management in two groups of the companies are not equal management in two groups of high quality and low quality companies.

#### **t test**

Prior to test equality of means, Equal variances test should be applied. Table 12 indicates that Equal variances test has been applied by using Leven test (if the significance level of the test is less than 0.05, the

equal variances hypothesis is rejected, or else, it is accepted) and testing equality of means should be applied after conducting equal variances test (In this study, testing equality of means has been applied under both equal variances and not equal variances conditions) Table 11.

According to Table 12, the probability of equal variances test is 0.386, that is, the variance of this variable is of homogeneous type. Therefore, under equal variances conditions, the significance level of  $t$  is equal to 0.212 which indicates that null hypothesis is accepted, that is, the means of earnings management in two groups of low quality and high quality companies are equal.

Considering the results of the test, it can be stated with 95% assurance that earnings management has no significant relation with earnings persistence, that is, earnings management has no effect on earnings persistence. Results of testing the hypotheses can be seen in Tables 13 and 14.

## DISCUSSION

Based on the conducted studies which deal with the purpose of performing earnings management in Iran (transferring the classified information or misstating financial reports and seeking opportunistic benefits), it is transparent that earnings management is rather performed to misstate financial reports and satisfy opportunistic benefits. However, according to the results of the recent studies conducted in western countries, it is clear that in those countries, earnings management is rather performed in order to transfer the classified information. This is undoubtedly due to the existence of the rules and limitations, such as Sarbanes Oxley Act (2002), which acts as a supervisory body over those companies which perform earnings management. Recently, accounting estimates are more viewed than previous time. Therefore, the probability of facing legal, as well as criminal claims for all companies, even those with clean records, has drastically increased. By the application of these rules, managers, if making errors in their predictions, are more plausible to be faced with legal claims from the shareholders. Hence, managers should render more caution while presenting their predictions.

The results of one study conducted by Ki Xing Liu (2004) reveal that compared to the previous years, the amount of earnings management has significantly decreased after the execution of Sarbanes Oxley act. This can indirectly signify that managers are becoming more cautious in presenting their predictions (Mehrazin, 2008).

The results of this study are in alignment with the results of other studies conducted by Mashayekhi et al. (2005), Mehrani and Arefmanesh (2008), Haghghat and Raygan (2008), Jabbarzadeh Kangarlouei et al. (2009), Gerald and Jean Lobo and Zhou (2001), Richardson et al. (2002) and Lev (2003). However, those studies

**Table 12.** The results of comparing means of earnings management in two societies.

	Leven test for equality of variances		t test for equality of means	
	f Statistic	SIG	t Statistic	SIG
Equal variances assumed	0.760	0.386	-1.260	0.212
Not equal variances assumed			-1.345	0.187

**Table 13.** Results of hypotheses based on regression test.

Hypothesis	Test	WALD statistic	SIG	Hypothesis' result	Analysis
1. Earnings management decreases the accuracy of predicting future operating cash flows	K-Squared test	6.766	0.009	Not rejected	Earnings management is of opportunistic type
2. Earnings management decreases earnings persistence	K-Squared test	1.564	0.211	Rejected	No significant relation between earnings management and earnings persistence

**Table 14.** Results of hypotheses based on the test of comparing means of earnings management in two societies of high quality and low quality companies.

Hypothesis		Test	$\frac{t \text{ statistic}}{z \text{ statistic}}$	SIG	Hypothesis' result	Analysis
1. Earnings management decreases the accuracy of predicting future operating cash flows	Parametric	t	2.722	0.007	Not rejected	Earnings management is of opportunistic type
	Nonparametric	U Mann Whitney	-2.894	0.004	Not rejected	Earnings management is of opportunistic type
2. Earnings management decreases earnings persistence	Parametric	t	-1.260	0.212	Rejected	No significant relation between earnings management and earnings persistence

conducted by Baharmoghadam and Kouhi (2008), Tucker and Zarowin (2006) and Demerjian et al. (2006), do not support the results of the study. Also The results of one study conducted by Haghghat and Raygan (2008) which deals with the relationship between earnings management and earnings persistence show that earnings management reduces earnings persistence. However, another study by Tucker and Zarowin (2006) which deals with the same issue emphasizes that earnings management increases earnings persistence.

Moreover, positive relationship between the company size and the quality of financial reporting indicates that since the activities committed by big companies are viewed by different stakeholders and supervisory bodies such as; independent auditors, the government (Taxation Bureau) and so on, they are obliged to observe transparency while presenting financial information to different groups of users. The finding supports the results of the studies conducted by Nowravesh et al. (2006) and Cohen

(2004), however it is not in alignment with the results of the studies by Nahandi (2009), Watts and Zimmerman (1978), Myers and Skinner (2002), and Nelson et al. (2002).

## Conclusion

Based on the results of testing the first hypothesis, it can be summarized that earnings management, when was performed through accruals, decreased the quality of financial reporting, that is, earnings management was performed with a tendency towards misstating financial reports and it contained opportunistic benefits, since it reduced the accuracy of predicting future operating cash flows. This conclusion was achieved based on the results of the following tests:

In testing the relationship between earnings management and the accuracy of predicting future operating



cash flows through components of operating earnings, it became clear that there was a significant and negative relationship between these two factors.

Also, Comparing the means of earnings management in two groups of low quality and high quality companies, based on the accuracy of predicting future operating cash flows model through components of operating earnings, it became evident that the mean of earnings management in low quality companies was bigger than that of the high quality companies'.

In addition, taking into account the results of testing the first hypothesis, it was apparent that the company size had a significant and positive relation with accuracy of predicting future operating cash flows through components of operating earnings, that is, the bigger the size of a company, the more accurate the prediction of future operating cash flows which was an index in quality of financial reporting.

Considering the results derived from testing the second hypothesis, it can be concluded that earnings management had no significant relation with earnings persistence. It is worth mentioning that earnings persistence is one of the reasons for the companies to commit earnings management.

Also, comparing the means of earnings management in two groups of low earnings persistence and high earnings persistence companies, it became clear that the two groups enjoyed equal means of earnings management. Furthermore, according to the results of testing the second hypothesis, it can be deduced that the company size had a significant and positive relation with earnings persistence, that is, the bigger the size of a company, the greater the earnings persistence which was an index in quality of financial reporting.

## RESEARCH LIMITATION

Accruals are measured through two main approaches: 1) Balance sheet approach 2) Cash flow approach. In this study, due to the limitations in measuring the current portion of long-term liabilities, cash flow approach is applied. The application of this approach may not bring very precise results as there may be some earnings which are not of operating type and consequently are not included in operating cash flows. Therefore, when operating cash flows are deducted from the net income, these cash flows are included in accruals.

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