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# Investigating the Roles of Shareholders and External Board Directors on the Earnings Management: Evidence from Companies in the Tehran Stock Exchange

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**ABSTRACT**

The objective of this study was to investigate the effect of controlling shareholders on the board outside directors on earnings management in the companies listed in the Tehran stock exchange. There are many theoretical mechanisms to run companies, including the effect of controlling shareholders and earnings management. In fact, the financial reports provide means for directors to transfer information obtained from performance of the company suppliers for financial statement users. In this study, the data required to test hypotheses was obtained from the financial statements and financial statements notes of companies listed in Tehran Stock Exchange. The locational domain of the study included all of the companies listed in Tehran Stock Exchange and the time domain of "cross-sectional and retrospective" study was 5 years. In terms of logic of implementation, it is considered as a comparative study. In addition, it is applied in terms of the results of the study. Statistical tests were implemented on 102 companies selected as sample among 612 companies. The required data was collected from the Stock Exchange site and Rahavard Novin (modern achievement) Software such as Stata, Excel, and Spss. To determine type of combined data, Limer F-test and Hausman test have been used. Additionally, to analyze and test the hypotheses of the study, linear regression method was used. Experimental evidence obtained from testing the hypotheses suggested that there was a negative relationship between controlling the shareholders and board outside directors in companies listed in Tehran Stock Exchange at the 0.95% confidence level. In addition, there was a negative relationship between the size of the company and earnings management in the companies listed in Tehran Stock Exchange.

JEL Classifications: M30; M31; M39.

Keywords: Earnings Management; Controlling Shareholders; Board outside Directors; Size of Company; Company Growth.

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## 1. INTRODUCTION

Financial reports are an important source of information, which investors use them in their own decisions. One of the accounting figures that investors have paid much attention to it is the accounting earnings management. The importance of accounting earnings management has caused the directors to pay special attention to its sum and calculation method, try to show their situation desired, and manipulate the earnings according to the case. One of the ways throughs which directors can manage their earnings is the use of optional accruals. Directors are able to use their authorities to use the accounting procedures and to use practices and procedures leading to increased earnings. There are different motivations for earnings management that one of them is to increase the company's stock price during initial public offering (Friedlan, 1994). Increasing actual earnings management is one of the potential outcomes of more stringent legislation, since strict supervision and regulation leads to limited earnings management. In addition, the willingness to use actual earnings management that its discovery is the low increases (Ewert and Wangenhofer, 2005).

*1.1 Theoretical Principles of the Study*

Board is considered as the most important factor in controlling and monitoring the company's management and protecting the shareholders' resources. One of the issues raised in the area of board focuses on board composition. There are controversial views on the issue that how board composition affects monitoring and thus the performance. Literature suggests the board composition representation issues. The result of the literature suggests that companies with larger boards and more internal directors have greater willingness for the representation issues. In contrast, business institutes with small boards and a greater percentage of board outside directors are correlated with the welfare of shareholders and business institute performance. Small size board can convince the management in allocation and sharing of assets for the earnings management easily. Therefore, board size is one of the factors affecting the earnings management.

The composition of the board is perceived as the ratio of board outside members to total number of board members. As board is composed of more independent members, representation problems reduce (Hermalin and Weisbach, 1991). Unlike responsible directors, outside directors are independent of the company management. For this reason, they act effectively in playing their monitoring role. Thus, theoretically, when the board is independent and is composed of a high proportion of outside members, the performance of the company enhances (Muth and Donaldson, 1998). In addition, boards that are more independent are in better situation to direct the resources towards the earnings management, since they have broader vision of the company and its general performance due to their independence. In spite of the increased public awareness and knowledge level of the users of financial statements, the problem is nowadays seen heavily relying on the accounting reports figures (especially accounting earnings as one of the main criteria to evaluate the performance) to decide on investment. Such non-rational reliance creates much motivation for managers to manipulate these figures for their own advantage (management). In other words, they manage the earnings.

As management earnings provide a wrong image of the functional results of the company, they cause incorrect judgment of shareholders and investors regarding the performance of the economic units and their directors. It not only leads to waste of principle and their capital earnings, but also it leads to a kind of cynicism among the shareholders and a healthy competition among the economics in the country. On the other hand, it causes that these investors to direct their capitals from underlying sector of economy (stock exchange) to the non-productive and false sectors (including brokerage, etc.). By doing this, the base of economy is corrupted leading to loss for all people in the society (Egbunike et all,2015). Board outside directors, when compared to other members of the board, have strong motivation to monitor the executive directors' actions and financial report process, and better monitoring on executive directors helps to maintaining and promoting business reputation of board outside members. Experimental evidence of researchers in line with theoretical predictions (for example, representation theory) supports the significant reduction of representing the costs due to increased presence of broad outside directors.

When higher number of board outside directors is the member of the board, investors and shareholders consider the information contained in the financial reports more reliable and consider the probability of earnings manipulation lower. Independence of the board of directors, non-executive members, can reduce the internal members' pressure, and therefore leave a positive impact on company performance criteria. It also can positively affect the performance criteria of the company. The presence of board outside directors in the board increases the power of the board as controlling mechanism.

Ultimately, outside directors collaborate less likely with the management in the expropriation of shareholders. They are judges reviewing the senior management and, if necessary, they replace effective people with management (Marnt, 2008). Earnings management reflects the ability and motivation of management to manage earnings. When directors are not motivated to manage the earnings opportunistically, they act according to the interests of the controlling shareholders and therefore independence of board members has no effect on perception of shareholders of accounting earnings. This relationship is supported by the experimental evidence of literature on the opportunist earnings management (Khan, et al. 2012). It is expected that boards with high independence have impact on the understanding of the shareholders of earnings credit under the earnings management conditions, since monitoring stronger board must strengthen the integrity of the financial reporting process and provide assurance to shareholders on the validity of reported earnings, so that stakeholders understand the monitoring created by the highest independence of the board members (Li, H. and Y. Qian, 2011). According to what was said, this study examines if controlling shareholders and board outside directors have impact on earnings management in companies listed in the Tehran Stock Exchange.

## 2. REVIEW OF LITERATURE

A considerable number of studied which searched the role of financial institutions and stock markets appeared in the finance literature over the decades (Sodeyfi, 2016; Dalgin et al., 2012; Kalim et al., 2012; Berument & Dogan, 2011; Katircioglu & Feridun, 2011; Rjoub, 2011; Karacaer & Kapusuzoglu, 2010; Chimobi, 2010; Michailidis, 2008; Siddiqui, 2008; Gokgoz, 2007Fethi & Katircioglu, 2015; Kaushal & Pathak, 2015; Chandio, 2014; Gungor et al., 2014; Fethi et al., 2013; Katircioglu, 2012; Roy, 2012; Saqib & Waheed, 2011; Barisik & Tay, 2010; Gungor & Katircioglu, 2010; Jenkins & Katircioglu, 2010; Khakimov et al., 2010; Waheed & Younus, 2010; Nazlioglu et al., 2009; Agu, 2008; Hachicha, 2008; Kuryanov, 2008; Katircioglu at al., 2006; Soukhakian, 2007; Soukhakian, 2007). however, studies focusing on micro issues like earnings management still deserve attention. In the study entitled "the earnings management, corporate governance and adherence of costs", Wu et all (2015) examined this issue. In this study, they expressed that the adherence of the costs is an important issue in accounting and economics studies, and literature related to this subject has shown that the adherence of costs cannot be separated from the motivations of managers. In this regard, in this paper, the impact on the earnings management on cost adherence was examined. With the definition of a small positive earnings or small increase in earnings as the management of earnings, it is seen that there is significant adherence of costs in non-management samples than the earnings management samples. Then, when costs are divided into parts including research and development (R & D) costs, advertising costs, and other public costs, results indicated that directors control the costs deliberately by reducing the public costs. Then, factor analysis method was used to examine the corporate governance effects on cost adherence. Using factor analysis employed in this study, eight important factors were extracted and observed. It was found that good corporate governance leads to reduced cost adherence.

Finally, the mutual effects of earnings management and corporate governance on adherence of costs were examined in this study. The experimental results related to this section showed that although good corporate governance has effect in reduced cost adherence, in the sample studied in this research, it has been observed that its effects have lower power than the effects of the earnings management. Meek et al (2007) examined this issue in a study entitled "The impact of corporate governance on earnings management practices: a case study on some selected companies in Nigeria". They stated that accountants and financial economists have believed for a long time on the fact that corporate governance affects both financial performance and opportunistic behavior of the directors. In this regard, this study aimed to evaluate the effects of corporate governance and earnings management methods in Nigerian companies. This assumption was based on the premise that increased organizational failure of large organizations, interpreted as organizational dysfunction, is associated with meeting the expectations of stakeholders. Then, Jones model was used to investigate the effects of corporate governance on earnings management. Primary and secondary data used for Nigerian companies were selected through purposive sampling method in period 2014-2011.

The data collected in this study was analyzed using the simple regression method by SPSS software. The main findings of this research showed that corporate governance practices such as board size, size of company, board independence and powers of the audit committee have significant impact on earnings management practices among the companies listed in Nigeria Stock Exchange. Based on the results obtained in this study, it was recommended that general improvement in corporate governance practices should occur in Nigeria. Sun, L & Rath, S (2009), examined this issue in the study titled "related values, earnings management, and corporate governance in China. In this study, he examined that how earnings management reduces related value level, and how good corporate governance prevents earnings management. To investigate this issue, he used collected data including 1012 observations for all the companies listed in Shanghai Stock Exchange SSE (180 companies) Shenzhen Stock Exchange SSE (100 companies). The experimental results obtained in this section showed that the related values were more in companies involved in the earnings management compare to companies that were not involved in the earnings management. In addition, it has been observed that companies with good corporate governance practices were more likely limit the earnings management when compared to other companies.

In a study titled as the impact of corporate governance on earnings management level in Tehran Stock Exchange, Vineeta, D. S. (2004) stated that corporate governance is one issue that has been considered in recent decades by the researchers in the accounting area due to increased financial scandals. Determining proper objectives and appropriate methods to achieve them and ultimately protecting the rights of all stakeholders (particularly micro-shareholders) are the ultimate goal of the corporate governance. In the present study, the main objective was to investigate the corporate governance on company's earnings management. Therefore, 4 hypotheses were developed in 6-year period (2006-2011) among the 73 companies listed on the Tehran Stock Exchange. To test the first and second hypotheses, Spearman correlation method was used, and to test third and fourth hypotheses, the mean of two populations was compared. The results of these tests indicate that the hypothesis independent variable (institutional investors) had no effect on the dependent variable of the study (earnings management), so the first hypothesis is rejected. The independent variable of this hypothesis (proportion of outside directors) had no effect on the dependent variable (earnings management), so the second hypothesis is rejected. The hypothesis suggesting that CEO of company as chairperson or vice chairperson of the board has impact on earnings management was confirmed only in 2011, but it is rejected in other years. The hypothesis suggesting that the internal auditor has impact on earnings management is not confirmed in none of the years. Result of this hypothesis is in line with study conducted by Jones, Jennifer (1991).

In a study entitled "the development and analysis of strategic game of director- shareholder: the use of theories of game, earnings management and corporate governance", Xie et al. (2003) stated that conflict and cooperation are one of the specific problems in behavior of people and organizations emerging in interacting with others. To maximize profits and to maintain cooperation, directors and shareholders use earnings management and corporate governance or for any reason (perhaps for moral reasons) refuse using it. The objective is to investigate the conflict and cooperation among the directors and shareholders of the company listed in stock exchange using the theory of games and finding equilibrium point in which director and shareholders as the main elements of the game to maximize their interests. Hypotheses are tested using the panel data of 87 companies listed in Tehran Stock Exchange between 2007 and 2012. The first hypothesis and second to fifth hypotheses of study were respectively analyzed using the function of the best response method and Mann-Whitney test. Finally, the combination of sever earnings management strategy and strong corporate governance do not bring equilibrium in interests for the players. In addition, in combination of mild earnings management strategy with strong corporate governance, equilibrium played weak role.

Akhtaruddin & Haron (2010) in a study titled "A comparative study of the effects of short-sighted management and earnings management on stock returns" examined the experimental evidence of shortsighted management and its relevance to research and development and marketing activities, and he investigated short term and long-term return of shortsighted management companies. This study was conducted to investigate the capital market in evaluating the marketing activities and research and development relevant to the shortsighted managers. The research method was correlational in which 78 companies listed in Tehran stock exchange between 2006 and 2010 were used to test the hypotheses, and to calculate future returns, the criterion of companies return until 2011 was used. The results of the research indicated that shortsighted management although has positive return in short term, it will leave negative impact on company's stock return in the long-term. Additionally, the comparison of the effects of shortsighted management and earnings management on stock return suggests that shortsighted management leaves higher negative consequences for company compared to earnings management.

In a study titled as identifying the efficient approaches of earnings management at earnings quality levels, Allegrini, M. & G. Greco, (2011) tried to identify the efficiency of earning management in portfolios composed of high and low quality. To determine the level of earnings quality, they placed 30% of companies that had the highest earnings quality in portfolio with high quality and they placed 30 of the companies with lowest quality in the portfolio low earnings quality. Results showed the earnings management in companies that have low earnings quality level is opportunistic. Additionally, in companies in which earnings quality level is high, opportunistic evidence of earnings management is higher than its efficiency. Therefore, earnings management reduces the quality of earnings and dummy data does not lead to right decisions.

## 3. RESEARCH METHODOLOGY

This research is correlational type of analytical-descriptive in terms of objective of study and it is cross-sectional and retrospective time in terms of time of study. It is also quantitative study in terms of implementation process of study and from the logic of implementation, it is comparative study, and it is applied in terms of results Khan et al. (2012).

### *3.1 Hypotheses*

The following hypotheses have been developed in this study:

H1. Controlling shareholders have a significant negative impact on earnings management in companies listed in the Tehran Stock Exchange.
H2. Outside directors have a significant negative impact on the earnings management in companies listed in Tehran Stock Exchange.

*3.2 Population and Sample of the Study*

The population of study included all the companies listed on the Tehran Stock Exchange in the period 2010-2014 by paying attention to the following criteria:

1. Companies listed in Stock Exchange before 2014
2. In order to establish the comparability and increase the harmony among the selected companies, the end of the fiscal year of companies should be the last day of each year
3. In order to establish the comparability, companies should not change their fiscal year during the study period
4. Their financial information should be available since 2014 and provide their financial reports regularly
5. Companies' information should be available during the study period
6. They should not be among the financial intermediaries (banks, insurance, holding). This is due to the different nature of these companies.

*3.3 Data Collection Tools and Method*

To examine the literature of the study, library method was used and field method was used to test the hypotheses of the study. To test the hypotheses, required data was extracted from the financial statements and appended notes of financial statement of the companies listed in the Tehran Stock Exchange. Explaining and measuring research variables, the variables of the study are as follows:

Dependent variable:

Earnings management: to calculate the earnings management, the following equation that is based on adjusted model of Jones was used. In the model that Jones provided for examining the earnings management in the business units, he supposed that non-discretionary accruals are fixed over time.

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

In this equation:
$NDA_{it}$: Non-discretionary accruals of company i in the current year (t)
$\Delta REV$ it: Total revenue of company i in the current year (t) compared to previous year (t-1)
$A_{it-1}$ : Total assets of the company i in the t-1 year

$PPE_{it}$ is gross properties, machineries, and equipment of company i in the year t
$\alpha_1, \alpha_2$ , and $\alpha_3$ are net parameters of the company

$\Delta REC_{it}$: Change in receivable accounts of company i in the current year (t) compared to previous year (t-1)
An estimate of the current accruals is considered as criterion to manage earnings.

The first stage of the calculations relates to the calculation of change in current assets ($\Delta CA$), change in cash ($\Delta CASH$), change in current portion of long-term debts ($\Delta STD$), and change in current debts ($\Delta CL$) in t year compared to t-1 year for each company i selected. Then, accruals ($TA_{it}$) in year t for each company i is calculated using the equation (20).

$$TA_{it} = (\Delta CA_{it} - \Delta CASH_{it}) - (\Delta CL_{it} - \Delta STD_{it}) - DEP_{it} \qquad (2)$$

Then, specific parameters of selected companies (α1, α 2, and α3) are specified using equation (3) for each company i in the year t.

(3)

$$\frac{TA_{it}}{A_{it-1}} = \alpha_1 (\frac{1}{A_{it-1}}) + \alpha_2 (\frac{\Delta REV_{it}}{A_{it-1}}) + \alpha_3 (\frac{PPE_{it}}{A_{it-1}}) + \varepsilon_{it} \quad (3)$$

In which:
$TA_{it}$: Total accruals of company i in the year t
$A_{it-1}$: Total assets of company i in year t-1
α1, α 2, and α3: OLS estimate of specific parameters of company

$\Delta REV_{it}$ is revenue of company i in the year t after deducting from revenue of year t-1
$PPE_{it}$ is gross properties, machinary, and equipment of company i in the year t

Then, non-discretionary accruals (NDA) of company i in year t are calculated using equation (1). If non-discretionary accruals (NDA) are deducted from total accruals (TA), discretionary accruals (DA) are obtained using equation (4).

$$DA_{it} = \frac{TA_{it}}{A_{it-1}} - NDA_{it} \quad (4)$$

In which:

$DA_{it}$: Discretionary accruals in company i in the year t
$TA_{it}$: Total accruals in the company i in the year t
$A_{it-1}$: Total assets of company i in the year t-1
$NDA_{it:}$ non-discretionary accruals of company i in the year t

Independent variables: according to the research conducted by Wou et al (2015), if the virtual variable is more than 50% of the company's stock available for an individual or company, it takes the number 1; otherwise, it takes number zero. Board outside directors: it is the ratio of outside members to total member of the board.

Controlling Variables:

According to research conducted by Wu et al (2015), it is obtained by multiplying the number of stock in the market value of each share. The size of the company can be effective in earnings management through the change in type of company financing and change in the company revenue. For this reason, the effect of company size is controlled in the study. Company growth: it can be calculated through the ratio of sales changes in the current t-year to sales in the previous year.

$$Growth = \frac{Sale_t - Sale_{t-i}}{Sale_{t-i}} \quad (5)$$

Company growth can affect the earnings management through the change in the accruals and type of financing. For this reason, the company growth variable was controlled in the study.

*3.4 Design of Hypothesis Testing*

To test the hypothesis, the regression method of panel data and Eviews software were used. The total equation to test the research hypotheses is as follows according to the research conducted by Wu et al (2015) and the representation cost theory:

$$EM_{it} = \alpha_0 + \beta_1 CS_{it} + \beta_2 ID_{it} + \beta_3 BS_{it} + \beta_4 growth_{it} + \beta_5 CS * ID_{it} + \varepsilon_{it} \quad (6)$$

In which EM is the earnings management index, ID is the board outside directors, BS is the size of company, and growth is the company growth. The variable $\boldsymbol{CS * ID}$ is the multiplicative effects of controlling shareholders and the presence of board outside directors. To test the first hypothesis, $\boldsymbol{\beta_2}$ significance is examined and to test the second hypothesis, $\boldsymbol{\beta_5}$ significance is considered. In this study, panel data method was used to analyze the information. Combining time series data with cross-sectional data not only provides useful information for estimating the econometric models, but also it can make considerable policy-making and planning interpretations based on the obtained results. One of the most important advantages of using panel data is controlling the heterogeneous properties and considering the individuals, companies, and states and the countries. However, cross-sectional and time-series studies do not control this heterogeneity and there is a fear of bias in the results by estimating the model using these models (Baltagi, 1995).

Accordingly, Limer F-test is used in order to detect the panel data, and if the probability of this test is under 5 percent, panel data method is confirmed. The second test is Hausman test used to distinguish the fixed effects from the random effects so that when the probability is fewer than 5%, fixed effects method is used, while random effects method is used when the probability is higher than 5%. The software used in this research is Eviews. Finally, normality tests of research residuals, variance heterogeneity test, and auto-correlation test are used.

Hausman Test:

Hausman test is generally used to select the method (fixed effects and random effects). Therefore, for this purpose, model is estimated using the fixed and random effects models. Then, the obtained coefficients are compared. In null hypothesis, this study is that the estimated coefficients obtained from random method are equal with coefficients obtained from fixed effects method. Test statistic are calculated in the way in which it has Chi - square distribution with k degree of freedom (the number of independent variables).

$$M = (b-\beta)' S^{(-1)} (b-\beta), S = (S_{fe} - S_{re}) S = (S_{fe} - S_{re}) \quad (7)$$

In which b is the slope estimates using the random effect method and $\beta$ is the slope estimates using the fixed effect method. If calculation statistic is larger than Chi-square table statistic, null hypothesis suggests that random effects can be used instead of fixed effects method is rejected and Hausman test proposes the fixed effects model of estimate (Wooldrige). As outlier data can affect the analysis results in undesired way, we firstly identify and remove the outlier data. Descriptive statistics of studied variables are shown in Table 1 below.

**Table 1. Descriptive Statistics**

| Variable | Earnings management | Board outside directors | Controlling shareholders | Company growth | Size of company |
|---|---|---|---|---|---|
| Symbol | EM | ID | CS | GROWTH | BS |
| Mean | 135095/2 | 0/366292 | 0/482877 | 1/793556 | 6/05815 |
| Median | 33917.00 | 0.400000 | 0.000000 | 0.009745 | 5.940171 |
| Maximum | 2082319. | 1.000000 | 1.000000 | 327.5668 | 8.175450 |
| Minimum | -119860.0 | -1.600000 | 0.000000 | -1.000000 | 4.412158 |
| SD | 306966.4 | 0.356897 | 0.500135 | 15.72036 | 0.783854 |
| Skewness | 3.621168 | -0.239009 | 0.068533 | 16.55562 | 0.458348 |
| Kurtosis | 19.38474 | 4.455832 | 1.004697 | 324.4176 | 2.817511 |

According to the results of the study showing that the effect of the independent variable of controlling shareholder (CS) on dependent variable of earnings management (EM) based on adjusted model of Jones (1991) is positive and significant, financial managers and stock exchange companies are recommended to adopt policies based on reducing the controlling shareholders and reduction of more than 50% of the company's stock to reduce the earnings management and accruals. This recommendation is consistent with research conducted by Wu et al (2015). In addition, according to the results of research that shows the effects of independent variable of outside directors (ID) on the dependent variable of earnings management based on adjusted model of Jones (1991) is positive and significant, financial managers and stock exchange companies are recommended to adopt policies based on increasing the proportion of board outside directors to total members of the board to reduce earnings management and accruals. This recommendation is consistent with research conducted by Wu et al (2015).

**Table 2. Regression for year between 2010 and 2015 (dependent variable: Earnings Management (EM))**

| Variables | Symbol | Coefficients | SD | Statistic t | Significance coefficient |
|---|---|---|---|---|---|
| Intercept | C | 11.71262 | 0.399957 | 29.28471 | 0.0000 |
| Board outside directors | ID | 2.001168 | 0.269386 | 7.428612 | 0.0000 |
| Controlling shareholders | CS | 0.749407 | 0.200897 | 3.730311 | 0.0002 |
| Company growth | GROWTH | -0.010317 | 0.004566 | -2.259259 | 0.0242 |
| size of the company | BS | 1.811448 | 0.022717 | 79.73814 | 0.0000 |
| Multiplicative variable of controlling shareholders and outside directors | CS*ID | 1.056719 | 0.396472 | 2.665304 | 0.0079 |
| | | Durbin Watson: 2.087675<br>Statistic F: 18.64845<br>Probability: 0.000000 | | The coefficient of determination: 0.755578<br>Adjusted coefficient of determination: 0.743024 | |

Source: research findings

**Table 3. Diagnostic Tests**

Results of Limer F-test

| Statistic | Probability | Result |
|---|---|---|
| 10.549957 | 0.0008 | Panel data |

Source: research findings

Hausman Test Results

| Statistic | Degree of freedom | Probability | Result |
|---|---|---|---|
| 0.930424 | 5 | 0.6945 | Random effects |

Source: research findings

**Table 4. Results of Hypotheses**

| Results of hypotheses | Hypothesis description | Number of hypothesis |
|---|---|---|
| Rejected | Is there negative and significant relationship between controlling shareholders and earnings management? | Hypothesis 1 |
| Rejected | Is there negative and significant relationship between board outside directors and earnings management? | Hypothesis 2 |

## 4. CONCLUSION

The current study documented the earnings management changes process over time and it examined if passing Securities Market Act has affected the activities of earnings management in Iranian companies or not. Results indicated that earnings management level is reduced in the period after passing the Securities Market Act, when we control the economic conditions changes and specific differences of the companies.

### *4.1 Recommendations for Future Researchers and Research Limitations*

Based on the major findings of this study, we recommend:

1. Using other econometric methods such as GMM method
2. Using several specific industries as population and comparing them

There were also several research limitations for the current study:

1. The results of the present study were obtained by using the data collected from the companies listed in the Tehran stock exchange. Therefore, in generalizing the results of this research to other studies, we should treat with caution
2. Incomplete information related to financial statements of some companies listed in Stock Exchange for some reason such as damage to files containing them and their elimination from the studied population, lack of using non-exchange companies due to lack of access to them.

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