Advances in mathematical finance & applications, 2 (3), (2017), 91-105

Published by IA University of Arak, Iran
Homepage: www.amfa.iau-arak.ac.ir

Impact of Institutional Ownership and Board Independence on the Relationship Between Excess Free Cash Flow and Earnings Management

Allahkaram Salehi* [a], Sajjad Mohammadi [b], Marzieh Afshari [b]

[a]*Department of Accounting, Masjed-Soleiman Branch, Islamic Azad University, Masjed-Soleiman, Iran*
[b]*Department of Accounting, Khoramshar-Persian Gulf International Branch, Islamic Azad University, Khoramshar, Iran.*

ARTICLE INFO

Article history:
Received 11 June 2017
Accepted 22 August 2017

Keywords:
Institutional Ownership,
Board Independence,
Excess Free Cash Flow,
Earnings Management.

ABSTRACT

However, the free cash flows scale is important for the financial health of the company, but it has also its own limitations. Moreover, it's not immune from accounting tricks. Free cash flows can be considered as a measure of value for shareholders of listed companies on Tehran Stock Exchange. The managers of these companies have tended to use the earnings management for managing the free cash flow and ultimately shareholder value and wealth. The main objective of this study is to investigate the interactive effect of institutional ownership and board independence on the relationship between excess free cash flow and earnings management in the Tehran Stock Exchange. The study is applied and correlation research by its objective and nature. The variables used in this study have been extracted from the financial reports of listed companies in Tehran Stock Exchange and the web page of Tehran Stock Exchange in the period of 2009 to 2015. The results suggest that, "institutional ownership" and "board independence" on the relationship between "surplus free cash flow and earnings management" had no significant effect.

1 Introduction

Profit includes cash items and accruals, and accruals are largely under the management's control. So management can manipulate accruals, or to use the modern term, manage earnings, in order to portray a better picture of the company's performance and predictable the future earnings. In other words, by selecting the authorized methods of accounting, managers attempt to create predictable and stable results. Because most investors and managers believe that companies that have good profitability and their profits do not experience major changes compared to similar companies, have more value and greater predictability and comparability [19].

Using assets is a measure for the ability of production assets and what they can produce; in contrast, improper use of assets indicates losses on investment. That may be the result of inefficient use of assets. Improper use of assets increases agency costs, because managers do not attempt to maximize the

* Corresponding author. *Tel.: +989161113704*
E-mail address: *a.k.salehi@iaumis.ac.ir*

interests of owners. Free cash flow is considered to be a factor for improper use of assets, because it allows managers to spend financial resources on activities that reduce shareholder wealth and thus increase agency costs. In the absence of effective governance, executives may invest in projects with the negative present value to receive bonuses or rent. Studies have shown that some of the opportunistic behavior of managers needs to be controlled by them, in order to ensure efficient use of assets to create and increase value for shareholders. In fact, the value of every company is not only in its ability to participate in creating free cash flow, but it also depends significantly on leveraging these funds, so that the proper use of free cash flow by the director of a company with growing investment opportunities makes the market react positively to these kinds of free cash flows, and as a result, stock price increases. Managers of companies with free cash flow may not only have a less than desirable performance, but also do not use the available free cash properly [13]. Since part of the company's property belongs to the major professional stakeholders, that unlike the minority shareholders, have access to valuable internal information about future prospects and business strategies and the company long-term investments, and this information is available to them through direct communication with managers. This situation is interpreted as concentration of ownership in corporations that large proportion of the shares owned by large investors (institutional investors) such as banks, insurance companies and corporate investment. Generally, it is believed that the presence of large investors may lead to a change in corporate behavior. This emerges from the regular monitoring activities of those investments [17]. Considering the fact that managers tend to use management tool to manage profit, free cash flow and ultimately, value and wealth of shareholders, therefore, it created an incentive in authors to study the interactive effects of institutional ownership and board independence on the relationship between excess free cash flow and earnings management in Tehran's Stock Exchange. The significance of this study lies in the fact that it shows investors whether institutional ownership and board independence and their interactional effect on free cash flow and earning management can be influential on creating value in corporations. Hence, we seek answer to this question that whether the existence of major institutional shareholders and board independence as one of the components of organizational monitoring can adjust the effects of excess free cash flow and earnings management? It is expected that the results of this study can have extra scientific value and achievements as follows:
First, the results of this research could be the expansion of theoretical bases of relevant literature on the investment and corporate governance. Second, the results of this research as a scientific contribution can provide useful information to investors, creditors and managers to achieve their goals. Third, the results of this research may suggest new ideas for further research on the subject of the investigation.

2 Theoretical Foundations

2.1 Free Cash Flow and Earnings Management

Free cash flow is considered as a benchmark to measure the performance of companies and shows the amount of cash that the company owns after expenditures for maintenance or development of assets. Free cash flow is important in terms that allow the company to seek opportunities to increase shareholder value. Without cash, development of new products, conducting business acquisition, paying cash dividends to shareholders and debt reduction is not possible. But sometimes managers' decisions are not beneficial to shareholders and cause falsify to the financial reports. In fact, earnings manage-

ment occurs when managers insert their judgements in financial reports and the way they record these reports that the alterations in reports do not mislead some shareholders in regards to economic performance of the corporation [17].
The findings of previous studies in other countries show that managers use earnings management to maximize shareholder. The motivation of earnings management by executives is to obtain the appropriate status among competitors and to increase share value in the capital market, which makes investors and creditors of the company have more favorable terms toward the [19].
The main role of financial reporting is in effective transition of financial information to outsider users in a reliable and timely manner. To this end, managers are exposed to opportunities for the exercise of judgment in financial reporting. Managers can use their knowledge about the business activities to improve the effectiveness of the financial statements as a tool to exhibit information to potential investors and creditors. However, if managers have incentives to mislead the users of financial statements by applying their powers in the field of accounting and financial reporting choices, we expect that earnings management occurs. Users of financial statements need to be aware that sometimes profits are managed and therefore it may vary from actual profits. Therefore, it is essential that consumers be more careful in making their decisions, and in addition to the quantity of the company's profit, also pay attention to earnings management behavior [9].

2.2 Combination of Institutional Ownership and Investors

Various studies have been conducted regarding the relation between major and institutional shareholders with return and corporate value and various results have been achieved depending on the various economic, social and cultural situations. Studies in this area show that the existence of major shareholders in the combined ownership could have positive and negative consequences for the company. Based on the efficient monitoring hypothesis, institutional shareholders have the ability to monitor and influence executives and prevent any opportunistic actions by managers. As a result, agency costs are reduced and thereby increase corporate value. But under the convergence of interest hypothesis, due to the influence of institutional shareholders, the interests of major shareholders and managers are aligned and causes ignorance of the interests of minor shareholders, and as a result of this adjustment of benefits, share value reduces.

2.3 Earnings Management and Institutional Ownership

Institutional ownership is defined as the sum of the percentage of shares of companies belonging to banking, insurance, financial institutions, holding companies, organizations, governmental institutions and companies [6]. Owners have the necessary incentive and power to control the use of their assets [3]. Ownership provides control over opportunistic behavior of managers by adjusting the relationship between free cash flow and the use of assets. Moreover, given the task of governance of ownership rights, agency costs that are caused by lack of information asymmetry and the separation of ownership from management are reduced [29]. Koh [14] found evidence that the companies supervised by institutional investors have the ability to limit manager's behavior. In addition, institutional investors possess the opportunities, resources and the ability to monitor, regulate and influence managers. Monitoring of firms by institutional investors force the managers to pay more attention on performance and less interest in opportunistic behavior or self-serving. Also, Park and Shin [22] stated that institutional

owners have more ability in detecting earning management than non-institutional owners, because they have access to relevant and on-time information.

2.4 Board Independence and Earnings Management

From the perspective of agency theory, the presence of non-executive directors and their monitoring activities as individuals help to reduce conflict of interest among shareholders and company executives in board meetings. As some of the authors believed, board directors play a major role in corporate governance. The main responsibility of the board is to establish effective governance over corporate affairs and to provide independent supervision on the activities of the executive and to requires managers' responsibility toward shareholders and the balance of the interests of various stakeholders. It is generally believed that when the board is more independent, it is able to exercise more effective control on the executive directors. In a study, Leuz et al. [16] surveyed the relationship between earnings management and the support for the foreign investors in 31 countries. The results showed that the accuracy of financial reporting and the support of foreign investors was positively associated and it also increased by more logical support of foreign investor.

3 Literature Review

In this section we review the existing related works.

3.1 External Researches

Jaggi and Gul [10] investigate the relationship between earnings management and free flow cash. They conclude that a direct link between earnings management and high free cash flows in companies with low growth. They believed, according to Jensen's theory, in such companies, executives invest the free cash flow in projects with negative net present value rather than distributing the cash flow among shareholders, which leads to a reduction in corporate value. Thus, managers of such companies try to adjust to the situation through the use of discretionary accruals increase of profit so that they achieve some of their personal interests. Jones and Sharma [12] examined the relationship between earning management and free cash flows in Australia and especially in companies with low and high growth. They concluded that there is a significant direct relation between discretionary accruals and free cash flow. The reason is that in this type of company, managers try to improve their business performance through the use of discretionary accruals. But they found no such relation in the companies with high growth. Park and Shin [22] examined the relationship between corporate governance (institutional investors, the presence of non-executive directors and financial managers on director board) and earnings management. The results showed that there is no significant relationship between the non-executive directors and manipulation of accruals. The presence of managers with financial expertise prevents income smoothing and also the presence of an agent of active institutional investors reduces earnings management.

Chung et al. [7] in their investigation of "earnings management, surplus flow free cash, external monitoring" suggests that managers in companies with low growth and high free cash flow use discretionary accruals increased profit to compensate for their low or negative profit, which inevitably comes with the projects that has a negative net present value. He concluded that high quality audit and insti-

tutional investors, whose shares are significant, adjust the relationship between free cash flow and accruals.

Yudianti [26] investigated the effect of earning management on the relationship between free cash flow and shareholder value in a study using 150 samples. The results with 95 percent confidence showed that changes in free cash flows are associated significantly with those in shareholder wealth. He also showed that there is a direct correlation between positive free cash flow and shareholder value, but there is no significant and direct correlation between negative cash flows and the value of shareholders. In the second hypothesis test with 99% confidence, he concludes that level of earnings management across the entire sample and the whole positive cash flows undermined the relationship between cash flows and created wealth for shareholders. In a research conducted in Sweden, Zerni et al. [28] have acquired evidence of positive free cash flow valuation for companies that have a stronger board and plan better for progressive investment opportunities. The results of the research by Takiah et al. [25] first showed that there is a significant negative relationship between free cash flow and optimal use of assets and then demonstrated the moderating effect of each of the ownership structures on the above mentioned relationship. They concluded that supervision on the optimal usage of assets in companies with more foreign ownership and higher free cash flow is more efficient. Also, when the managerial ownership is high, supervision on the optimal use of assets in companies with more cash is more efficient compared to companies with less cash. Also they found that governmental ownership resulted in inefficient use of assets in companies with high cash flow.

In his study in India, Bhundia [5] found that there exists a significant positive relationship between earnings management and free cash flow, and confirmed that the company's free cash flow manages to raise earning management. Al-Dhamari and Ismail [2] reviewed the corporate governance structure, excess free cash flow and earnings quality. They concluded that the companies in which ownership and management are two separate elements, levels of profits are fixed. The results suggest that when the SFCF is high, current profit of the company with smaller board and independent audit committee is more likely to remain stable in the future. Investors should also consider governance structure, free cash flow and its complications when evaluating the company's profits. They therefore suggest that the independence of the board of directors and institutional ownership does not have any impact on free cash flow surplus. Nekhil et al. [20] in their study investigated the moderating role of corporate governance and ownership structure in free cash flows and earnings management in France from 2001 to 2010 began. The results indicate that there is an opportunistic behavior of managers at the level of free cash flow. Especially in those approaches of earnings management that can increase your revenue or profit. The results also indicated that corporate governance mechanisms such as managerial ownership, audit committee independence and institutional investors reduced their earnings management.

3.2 Internal Researches

Mehrani & Bagheri [17] reviewed this matter in the article entitled “The effect of free cash flow and institutional shareholders on earnings management in listed companies in Tehran's Stock Exchange”. Their results suggest that generally free cash flow of firms can be considered as an incentive to manage earnings, as well as managers of companies with free cash flow and low growth, are likely to manage their earnings in order to achieve their personal interest in the short term. The results also showed that there is no significant relationship between earnings management and institutional shareholders in companies with high free cash flow and low growth. This suggests that the presence of

institutional shareholders could not prevent earnings management imposed by managers in companies with free cash flow and low growth. Nikoumaram and Mohammadzade Salte [21] in a study examined the relationship between corporate governance and earnings management between 2002 and 2007 with a population of 40 companies.

The results showed that 1) companies with sufficient corporate governance are (whether they have strong or weak corporate governance) own less discretionary accruals 2) companies with sufficient corporate governance, on equal levels of corporate governance capability, also own less discretionary accruals and 3) companies with poor corporate governance, compared to companies with strong corporate governance, do not necessarily possess greater discretionary accruals. Ahmadpour & Montazeri [1] in a study reviewed different approaches of earning managements and the effect of the corporate size, ownership structure and corporate governance on earnings management between 2003 and 2008 with a sample of 119 firms. The results showed that corporate size and family owners are two elements that influence manager's tendency in the choice of the kind of earnings management. In contrast, there was no significant relationship between non-executive managers, institutional shareholders, independent audit quality and manager's tendency toward the choice of earnings management. Moradzade fard et al. [19] in a research surveyed the effect of rewards from board of directors and institutional ownership on earnings management. The results indicate that there is a negative relationship between institutional ownership of shares and profit management and also a direct relationship between the amount of reward from board of directors and profit management.

Sadeghzadeh Fasfandighi and Aghaie [24] in their study called "the impact of corporate governance structure and surplus of free cash flow on the quality of corporate profit" showed that the independence of the board of directors and institutional shareholders has a significantly negative relationship with quality of profit and this relationship becomes significantly positive with the presence of excess free cash flow.

Setayesh and Salehnia [23] examined the impact of ownership structure and capital structure on the free cash flow in listed companies in Tehran's Stock Exchange. Their results demonstrated that corporate ownership and free cash flow of listed companies in Tehran's Stock Exchange. Their results demonstrated that there is a significant positive relationship between corporate ownership and free cash flow of listed companies in Tehran Stock Exchange. They also showed that there is no significant relationship between institutional ownership and management and ownership concentration in the sample firms. Zabihi and Asghari [27] in a study entitled "A survey of the relationship between excess free cash flow, corporate governance and company size with the ability to forecast profits" studied 101 companies listed in Tehran Stock Exchange during 2012 and 2014. To consider each of the adjustment factors on the ability to predict profits, they used components of excess free cash flow and corporate governance and company size.

For the corporate governance, they also used components of board independence, board size, independent Chairman of the Board and institutional owners. The results indicated that there is a significantly negative relationship between excess free cash flow and the ability to predict profits. According to the results obtained from the studied population, it also showed that there is no relationship among the components of corporate governance, institutional ownership and board independence with excess free cash flow. In some researches has been shown that elements of these two has no significant effect on the relationship between level of free cash flow and earnings management. Their results also showed that there is no significantly negative relationship between free cash flow and earnings management.

4 Our Proposed Method

4.1 Research Hypotheses

H_1: Institutional ownership effect on the relationship between excess free cash flow and earnings management,
H_2: Board independence effect on the relationship between excess free cash flow and earnings management,

4.2 Methodology of the Research

This study is applied research, and also a correlational study because the research to find a relationship among several variables. Since this research is based on the past literature so this study will be ex post facto. The population in this study includes all the listed companies in Tehran's Stock Exchange until end of 2008. The research period is from 2009 to 2015. We also used systematic elimination method for the selection of the sample. To this end, in each stage, companies that do not possess the following items have been deleted from the list and the rest of the companies have been selected for the test:

- Companies must have going concern during the year.
- Financial intermediary and investment companies are not in the sample.
- Their fiscal year must be ended 20 March each year.
- Their required information must be available.

Finally, applying conditions mentioned above, 166 companies were selected to estimate models and test hypotheses.
In this study, data collection was done in two phases. In the first phase, library method (referring to theses and papers in Persian and English through relevant websites) was used to develop theoretical foundations, and in the second phase, audited financial statements of the companies listed on TSE, databanks, software such as Rahavard Novin, report of the board of directors, internal audit reports, and the official website of the TSE were used.
We also used statistical indices such as mean, median, and dispersion indices. In this research multi variable regression was used for statistical analysis. We analyzed the data using Excel Software and after required modification and classification, we put the data in the STATA Software according to the variables under investigation.

4.3 Research Model and Variables

4.3.1 Independent Variables

Excess free cash flow(SFCF) is a dummy variable i.e. if retained cash flow (RCF) is higher than the median of the year and the ratio of stock price to book value is lower than the median of the sample in a year, the value is 1, otherwise 0. To measure free cash flows, the model proposed by Lehn and Poulsen [15] was used:

$$FCF_{i,t} = \frac{EBIT_{it} + D_{i,t} - TAX_{i,t} - INTEP_{i,t} - CSD_{i,t}}{TA_{i,t-1}}$$

In which:

$FCF_{i.t}$: Corporate free cash flow (i) in the year (t), $EBIT_{i.t}$: Earnings before interest and tax (i) in the year (t)

$D_{i.t}$: Annual depreciation expense (i) in the year (t), $TAX_{i.t}$: income tax (i) in the year (t)

$INTEP_{i.t}$: Financial expenses (i) in the year (t), $CSDIV_{i.t}$: common stock dividend (i) in the year (t) and $TA_{i.t-1}$: book value of assets (i) in the year t-.1

Institutional ownership (Insown): is a dummy variable. If companies in which the percentage of shared held by institutional shareholders is higher than the median of the sample, the value is 1, otherwise 0.

Board independence: If ratio of non-executive directors to the total board is higher than the median of the sample, the value is 1, otherwise 0.

4.3.2 Dependent Variable: Earnings Management- Discretionary Accruals

Discretionary accruals are commented on by managers. One feature of accruals is that they can be considered as an indicator of the company's accounting choices. In earnings management studies it is usually divided into two parts: discretionary accruals and non-discretionary accruals, and discretionary accruals are an index of earnings management.

The most famous model in estimating accruals in relation to earnings management research is Jones model [11], in which non-discretionary accruals are estimated by minimum regression. In this study, to calculate earnings management and discretionary accruals, we calculate non-discretionary accruals using the adjusted model by Jones presented by Dechow et al. [8]. In this model, total accruals are calculated as follows:

TA = EBIT – CFO

In which:

TA: total operational accruals; EBIT: operation profit; and CFO cash flow from operation.

After the calculation of total accruals by using the following model coefficients are calculated for each industry:

$$\frac{TA_{it}}{A_{i,t-1}} = \alpha_1\left(\frac{1}{A_{i(t-1)}}\right) + \alpha_2\left(\frac{\Delta RE_{it} - \Delta REC_{it}}{A_{i(t-1)}}\right) + \alpha_3\left(\frac{PPE_{it}}{A_{i(t-1)}}\right) + \epsilon_{it}$$

In which:

TA: total operational accruals; A_{t-1}: last year assets; ΔREV: Changes in net revenue

ΔREC: Change in trade receivable accounts; PPE: Gross Property, Plant and Equipment; ε_{it}: estimation error

Then, using coefficients and the information from each company, non-discretionary accruals (NDA) for each year firm is calculated using the following model:

$$NDA_{it} = \alpha_1\left(\frac{1}{A_{i(t-1)}}\right) + \alpha_2\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{A_{i(t-1)}}\right) + \alpha_3\left(\frac{PP_{it}}{A_{i(t-1)}}\right)$$

In the final stage, discretionary accruals (DA) are calculated as follows:

DA = TA – NDA

4.3.3 Control Variables

Size=Ln (total assets)
Financial leverage (LEV): total debt/ total assets

The study used regression models as follows:
Model 1

$$DISACC = \beta_0 + \beta_1 SFCF_{i,t} + \beta_2 Insown_{i,t} + \beta_3 Insnow.SFCF_{i,t} + \beta_4 Size_{i,t} + \beta_5 Leverage_{i,t} + \varepsilon_{i,t}$$

Model 2

$$DISACC = \beta_0 + \beta_1 SFCF_{i,t} + \beta_2 Indepnd_{i,t} + \beta_3 Independ.SFCF_{i,t} + \beta_4 Size_{i,t} + \beta_5 Leverage_{i,t} + \varepsilon_{i,t}$$

Table 1: Research Variables

DISACC	Earnings management- discretionary accruals
SFCF	Excess free cash flow
Insown	Institutional ownership
Independ	Boards of directors independence
Size	Firm size
Leverage	Financial leverage

Table 2: Results of the descriptive analysis of quantitative variables

Variable	Frequency	Mean	Standard deviation	Median	Minimum	maximum
Earnings management	1162	-0.02	1.00	-0.04	-2.82	3.58
Free cash flow	1162	-0.003	0.98	-0.02	-2.90	3.17
Institutional ownership	1162	0.74	0.20	0.79	0.02	1
Board of directors independence	1162	0.65	0.20	0.60	0.00	1
Financial leverage	1162	0.65	0.26	0.65	0.02	3.06
Firm size	1162	13.59	1.47	13.43	9.88	18.82

5 Findings

5.1 Descriptive Indicators of Variables

In this section we describe research variables with the use of central and dispersion parameter such as mean, median, standard deviation, minimum and maximum. Table 2 shows the descriptive indicators of the research variables. In this research, we calculated mean, standard deviation, median (p50), minimum and maximum to study the descriptive indicators of variables.

5.2 Correlation Coefficients between Variables

To determine the type and the size of the relationship between the explanatory variables, including the independent variables and control variables, Pearson correlation coefficients were calculated and shown in table 3 below.

Table 3: Correlations between variables

Variables		Earnings management	Free cash flow	Institutional ownership	Board independence	Financial leverage	Firm size
Earnings management	Correlation : significance:	1					
Free cash flow	Correlation: significance :	-0.532 0.000	1				
Institutional ownership	Correlation: Significance :	0.073 0.018	0.036 0.201	1			
Board independence	Correlation: Significance:	-0.036 0.424	0.049 0.063	-0.087 0.003	1		
Financial leverage	Correlation: Significance:	-0.160 0.000	- 0/189 0/000	-0/010 0/724	-0/155 0/000	1	
Firm size	Correlation: Significance:	0/074 0/012	0/046 0/121	0/066 0/025	-0/026 0/369	-0/038 0/192	1

*Source: Research Results

5.3 Test Results of Suitable Estimation Model Selection

It is necessary to run Chow (F Limer) test before model estimation. This test determines whether to use Pooled model or fixed effects model.

Table 4: Test results of suitable model selection

Model	F test Statistics probability	Chow test Statistics probability		Hausman test Statistics probability		Approach
Model 1	83.42 0.000	1.97	0.000	27.41	0.000	Panel regression with fixed effects
Model 2	85.81 0.000	2.47	0.000	24.83	0.000	Panel regression with fixed effects

*Source: Research Results

If the F statistic is significant at the 5% level, the null hypothesis (Pooled) will be rejected and fixed effects model will be accepted. Results are shown in Table 4.
A panel regression is significant. Now, to recognize whether to use panel regression with random or fixed patterns to estimate above models we look at the column of Hausman test. Because the probability of Hausman test was 0.000 and this value is smaller than 0.05 In order to estimate the model, the panel regression with fixed effects should be used.

5.4 Results of Research Hypotheses and Analysis

First hypothesis states that "institutional ownership influences the relationship between excess free cash flow and earnings management". The results of this test using a panel regression with fixed effects is shown in Table 5 below. According to this table, the variable "excess free cash flow" has a significantly and negative impact on the variable of "earnings management". It is because the possibility of that is less than 0.05. Also the Interactive effects of two variables of "excess free cash flow" and "institutional ownership" is positive on "earnings management" but since the amount is likely to be greater than 0.05, so the impact is not significant.

Table 5: Test results of the first Hypothesis

variable	Results of model estimation			
	Ratio	Standard error	T statistics	probability
constant	-3.87	1.09	-3.36	0.000
Excess free cash flow	-1.24	0.23	-4.89	0.000
Institutional ownership	-0.03	0.24	-0.04	0.910
Excess free cash flow+ institutional ownership	0.31	0.36	1.09	-0.249
Firm size	0.34	0.04	5.13	0.000
Financial leverage	-1.03	0.18	-6.06	0.000
F statistics	71.12			
probability	**0.000**			
Adjusted coefficient of determination	0.1249			

*** Source: Research Results

As a result, the first hypothesis is rejected with 95 percent confidence. It should be noted that the variable "size", has a positive and significant impact on the variable of "earnings manage" and variable of "leverage" has a significant negative impact on the variable of "earnings management". Table 5 also shows that the statistical probability of F is 0.000, and because this value is smaller than 0.05, Therefore, this model has been considered significant to test this hypothesis with 95 percent of confidence. The coefficient of determination of the model is equal to 0.1249.

This value indicates that 12.49 percent of the changes of the variable of "earnings management" is determined by the changes of "excess free cash flow", "board of director's independence", and the interactive effect of these two variables and also the control variables of " size" and " leverage". The result: "institutional ownership" had no significant effect on the relationship between "excess free cash flow" and "earnings management". Thus the first hypothesis is rejected.

The second hypothesis states that the board independence influences the relationship between excess free cash flow and earnings management. The results of this test using a panel regression with fixed effects is shown in Table 6. According to this table, the variable of "excess free cash flow" has a significant and negative impact on the variable of "earnings management. This is because this value is less than 0.05. Also, Interactive effects of the two variables of "excess free cash flow" and "independence of the board" is positive on the variable of "earnings management", but because its possibility is greater than 0.05, so the impact is not significant.

As a result, the second hypothesis in both cases is rejected with 95 percent confidence. It should be noted that the variable of "size" has a positive and significant impact on the variable of "earnings management" and the variable of "leverage" has a significant negative impact on the variable of "earnings management.

Table 6: Test results of the second hypothesis

variable	Results of model estimation			
	ratio	Standard error	T statistics	probability
constant	-3.21	1.01	-3.92	0.000
Excess free cash flow	-1.28	0.19	-5.09	0.000
Board of directors independence	-0.18	0.26	-0.74	0.761
Excess free cash flow+ board of directors independence	0.30	0.28	1.72	0.282
Firm size	0.39	0.07	5.11	0.000
Financial leverage	-1.07	0.18	-4.95	0.000
F statistics	83.56			
probability	0.000			
coefficient of determination	0.1231			

Source: research results

Table 6 shows that the probability of F statistic of 0.000, and because these values is smaller than 0.05, Therefore, the proposed model to test this hypothesis is considered significant with a 95% confidence.
The coefficient of determination of the model is equal to 0.1231. This value indicates that 12.31 percent of changes of variable of "earnings management" is determined by the variables of "excess free cash flow" and "board independence" and the interactive effects of these two variables and control variables of "size" and "Leverage". As a result, "independent board" had no significant effect on the relationship between "excess free cash flow" and "earnings management". So, the second hypothesis is rejected.

6 Discussions and Conclusion

The aim of this study was to investigate the interactive effects of institutional shareholders and board independence on the relationship between excess free cash flow and earnings management in firms listed in the Tehran stock exchange. The results show that generally free cash flow of firms can be considered as an incentive to manage earnings and managers of companies with high free cash flows, are likely to manage earnings to achieve their own personal interests in the short term. Today, the institutional shareholders (as one of the corporate governance mechanisms) are of particular importance to prevent opportunistic behavior of managers in order to apply earnings management. Corporate governance reports suggest that institutional shareholders, due to the high percentage of its ownership, possess the ability to control the actions of company managers and thus can affect corporate performance. But the results of this research showed that institutional ownership and board independence, as corporate governance mechanisms, do not influence earnings management independently. This finding is not in line with the previous research in the literature. Also, the interaction of each of these components with free cash flow has no effect on earnings management.
Among the reasons that can be cited is the low percentage of institutional investors and high percentage of government ownership in ownership structure, small number of non-executive board members and possibly uses of other tools to manage earnings. Thus, the results indicate that the major shareholders and board independence in the Iranian capital market are not considered as important criteria in corporate governance. It is therefore proposed to the Stock Exchange and standard setters to reconsider the components of corporate governance. The financial experts are also advised to use larger samples, especially banks and intermediary companies to investigate the matter in future studies. The results of this study is in line with those from some literatures and do not comply with the results obtained by Nekhili et al. [20].

References

[1] Ahmadpour, A., Montazeri H, *Type of earnings management and the impact of company size and ownership structure on it*. Shiraz University of developments in accounting, 2011, **3**(2), P. 1 -35.

[2] Al-Dhamari, R. A., Ismail, K. N. I. B. K., *Governance Structure, Surplus Free Cash Flow(SFCF), And Earning Quaility: Evidence from Malaysia*. Journal of Modern Accounting and Auditing, 2013, **1**(83), P. 8121-8189.

[3] Ang, J. S., Cole, R. A., Lin, W. J., *Agency cost and ownership structure*. Journal of Finance, 2000, **55**(1), P. 81–106.

[4] Baradaran Hasanzadeh, R., Badavar nahandi, Y. and Esmaili, S., *The Effect of Ownership Structure on Auditing Quality.* The Financial Accounting and Auditing Researches, 2014, **23**(3), P. 99-115. (In Persian)

[5] Bhundia, A., *A comparative study between free cash flows and earnings management*. Business Intelligence Journal, 2012, **5**(1), P. 123-129.

[6] Bushee, Brian. J., *The Influence of Institutional Investors on Myopic R&D Investment Behavior.* Journal Financial Economics, 1998, **86**, P. 279–305.

[7] Chung, R., Firth, M., Kim, J. B., *Earnings management ،surplus free cash flow and external monitoring.* Journal of Business Research, 2005, **58**(6), P. 766-776.

[8] Dechow, P., Sloan, R., Sweeney, A., *Detecting Earnings Management*. Accounting Review, 1995, **70**, P. 193 – 225.

[9] Jabbarzadeh Langarluie, S., Mohammad Salteh, H., Bayazidi, A., Moneskhah, G., *The relationship between earnings management in group companies (integrated) with the output of the main corporate in Tehran Stock Exchange.* Quarterly Stock Exchange, 2010, **11**, P. 106-191.

[10] Jaggi, B., and Gul, A., *Evidence of Accrual Management: A Test of the Free Cash Flows and Debt Monitoring Hypothesis*, 2000, Working Paper, www.ssrn.com.

[11] Jones, J., *Earnings management during import relief investigations.* Journal of Accounting Research, 1991, **29**(2), P. 193-228.

[12] Jones, S., Sharma, R., *The Impact of Free Cash Flow, Financial Leverage and Accounting Regulation on Earnings Management in Australia's 'Old' and 'New' Economies*, Managerial Finance, 2001, **27**(12), P. 18-39.

[13] Khodadadi, V., Rashidi Baghi, M., Ghorbani, R., Kaviani, M., *Impact of Ownership Structure on the relationship between free cash flow and efficient utilization of assets,* Research journal of asset management and financing, 2013, **1**(1), P. 108-193

[14] Kohl, P. S., *On the Association between Institutional Ownership and Aggressive Corporate Earnings Management in Australia*, The British Accounting Review, 2003, **35**, P.105–128.

[15] Lehn, K., Poulsen, A., *Free Cash Flow and Stakeholder Gains in Going Private Transactions*, The Journal of Finance, 1989, **44**(3), P. 771–787.

[16] Leuz, C., Dhananjay, N., Management: *An international comparison., Peter, W., Investor protection and earnings*, Journal of Financial Economics, 2003, **69**, P. 505-527.

[17] Mehrani, S., & Bagheri, B., *The effect of free cash flow and institutional shareholders on earnings management in listed companies in Tehran Stock Exchange,* Journal of Accounting Research, 2009, **1**(2), P. 50- 71.

[18] Moradzade Fard, M., Gheytasi, R., Masjet Mousavi, S., *The study of the relationship between corporate free cash flow and shareholder free cash flow with stock market value of companies listed in Tehran Stock Ex-*

change, Journal of Financial Studies, Islamic Azad University, Science and Research Branch of Tehran, 2015, **7**, P. 1 -18.

[19] Moradzade fard, M., Zarezade Mehrizi, M. S., Taker, R., *The impact of board of director's Bonus and institutional ownership on earnings management in companies listed in Tehran Stock Exchange,* Quarterly Stock Exchange, 2012, **18**, P. 137- 152.

[20] Nekhili, M., Amer, I., Chtioui, T., Lakhal, F., *Free cash flow and earnings management: the moderating role of governance and ownership*, 2015, Available at www.ssrn.com.

[21] Nikoumaram, H. & Mohammadzede Salteh, H., *A model to explain the relationship between corporate governance and earnings quality*, Journal of Managerial Accounting, 2010, **3**(4), P. 80-85.

[22] Park, Y. W., Shin, H. H., *Board composition and earnings management in Canada*, Journal of Corporate Finance, 2004, **10**(3), P. 431-457.

[23] Setayesh, M.H., and Salehinia, M., *Impact of Ownership Structure and Capital Structure on free cash flows,* Research in financial accounting and auditing, 2015, **7**(25), P. 15-32.

[24] Sadeghzadeh Fasfandiqghi, A.Salar, Aghaie., *II Study of the effect of Excess free cash on the quality of corporate profits. Third International Conference on Management, Economics and Accounting, Tabriz, East Azerbaijan agency of industrial Management organization*, 2015.

[25] Takiah, M., Iskandar, R., Br Bukit., Zuraidah, M. S., *The Moderating Effect of Ownership Structure on the Relationship Between Free Cash Flow and Asset Utilization*, 2012.

[26] Yudianti, N., *The Effect of Investment Opportunity Set and Earnings Management to the Relationship between Free Cash Flow and Shareholder Value,* Journal of Business Research, 2008, **12**, P. 193-228.

[27] Zabihi, A., and Asghari, M., *The relationship between free cash flow, corporate governance and company size with the ability to predict profit. Fourth National Conference of modern management*, 2015.

[28] Zerni, M. K., and Nilsson, H., *The entrenchment problem, corporate governance mechanisms, and firm value,* Contemporary Accounting Research, 2010, **27**(4), P. 1169 - 1206.

[29] Watts, R. L., and Zimmerman, J. L., Agency problems, auditing, and the theory of the firm: some evidence. Journal of Law and Economy, 1983, **26**, P. 613–633.