The Effect of Managerial Ownership on the Relationship Between Free Cash Flow and Earnings Management

Reza Razizadeh and Ghodratalah Talebnia
Islamic Azad University, East Azarbaijan Science and Research Branch, Tabriz, Iran

Abstract: The aim of this study was to evaluate the effect of managerial ownership on the relationship between free cash flow and earnings management in companies listed on the Tehran Stock Exchange. To answer this question, a sample of 104 companies listed on the Tehran Stock Exchange were studied in the period of 2009-2013. Earning management variable was evaluated using Jones's model in 1995. To test the hypothesis, regression models were used at the significance level of 95 and 90%. It should be noted that Pearson and Spearman correlation coefficients were used at the significance level of 95 and 90%.

Key words: Ownership management, free cash flow, earnings management, level, variables

INTRODUCTION

Profit consists of cash and accruals items and accruals are largely under management board control. They can handle accruals for corporate better performance and increase the predictability of future earnings and in other words, manage accruals. On the other hand, the directors according to agency theory can be motivated sufficiently to manipulate earnings to maximize their own interests. Earnings management is resultant of flexibility degree and theoretical practices that managers observe in their reporting. Managers may use their power to opportunistly manage profits or transfer the confidential information about the company future performance. Most of the researchers have found that earnings management is done with the purpose of misleading users of financial statements or deviation of conventional outcomes depending on the accounting profits. Free cash flow is a benchmark to measure the companies performance and shows the cash that the company owns after expenditures for maintenance or development of assets. Free cash flow is important in this respect that allows the companies to seek opportunities to increase shareholder value. Without cash, developing new products, doing business education, paying cash dividends to shareholders and debt reduction are not possible.

Earnings management occurs at the companies where their managers are trying to present desirable image of the company's performance and its financial condition through discretionary accruals. Administrators use the flexible concepts and basics of accounting for earnings management. For example, there are various accepted methods about the amortization of depreciable items and manager can choose one of these methods.

Is one of the issues raised in representation theory and corporate governance that leads to align the interests of shareholders and managers, actually, management ownership or the shareholder directors are in common between managers and shareholders (Kordnaiej, 2004).

Researches and previous studies (in Iran) have not been investigated the relationship among management ownership, free cash flow and earnings management. However, it is predicted there is nonlinear relationship between management ownership and earnings management.

According to the discussed views and concepts related to free cash flow, earnings management and related agencies problems, increase of management ownership is likely to reduce the managers' motivation to opportunisticly manage the reported earnings. In the current study, the researcher is trying to answer the following questions: Dose management ownership influence on the relationship between free cash flow and earnings management?

Research hypothesis: According to the concepts discussed in the introduction, theoretical framework and objectives of the study, the study hypotheses were formulated as follows:

- The main hypothesis: management ownership impacts on the relationship between free cash flow and earnings management

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Corresponding Author: Reza Razizadeh, Islamic Azad University, East Azarbaijan Science and Research Branch,Tabriz, Iran

- The first secondary hypothesis: high management ownership impacts on the relationship between free cash flow and earnings management
- The second secondary hypothesis: Low management ownership impacts on the relationship between free cash flow and earnings management

The present study aimed to determine the effect of management ownership as the main mechanism of corporate governance on management problems of free cash flow, earnings management and their relationship. The research objectives include:

- Determining the impact of top management ownership on the relationship between free cash flow and earnings management
- Determining the impact of low management ownership on the relationship between free cash flow and earnings management

MATERIALS AND METHODS

The current study examined the effect of management ownership on the relationship between free cash flow and earnings management. The time span of the study was 5 years from 2009-2013. The research has also been conducted at the accepted spatial domain of the listed companies in Tehran Stock Exchange.

To analyze the data, descriptive and inferential statistical techniques were used. As the descriptive statistical techniques, it can be reffered to descriptive statistics tables, bar charts, pie point. For analyzing the research hypothesis, analytical techniques were also used.

To explain the relationship between the basic variables and test the hypotheses, regression models were used. The correlation tests were specifically related to regression models and estimation of kind and intensity of the relationship between fundamental variables of the study.

According to the multiple linear regression model and correlation analysis (correlation coefficients), SPSS software was used. The analytical model of the study was a surface cross-sectional model which has been created using the company regression model (i) and time (t).

Dependent variable: According to the conducted studies, Jones's modified model is the most powerful model to describe and predict earnings management.

Accordingly in the current study, the mentioned model was used to calculate discretionary accruals. In Jones's modified model, the total of accrual fisr was calculated as follows:

$$TA_{t,i} = \Delta CA_{t,i} - \Delta CL_{t,i} - \Delta CASH_{t,i} + \Delta STD_{t,i} - DEP_{t,i}$$

TA   =   Total accruals of the i company in t year

TA   =   Change in current assets of the i company between the years t and t-1

$\Delta CA_{t,i}$ =   Change in current liabilities of the i company between the years t and t-1

$\Delta CL_{t,i}$ =   Change in current cash of the i company between the years t and t-1

$\Delta CASH_{t,i}$ =   Change in current portion of long-term liabilities of the i company between the years t and t-1

$DEP_{t,i}$ =   Cost of i company depreciation in t year

After the calculation of the total accruals, parameters of were estimated to determine non-discretionary accruals through the following formula:

$$TA_{i,t} / A_{i,t-1} = \alpha_1(1/A_{i,t-1}) - \alpha_2(\Delta REV_{i,t} / A_{i,t-1}) - \alpha_3(PPE_{it} / A_{i,t-1}) + \varepsilon_{it}$$

Where:

$TA_{i,t}$ =   The total accruals of the i company in t year

$\Delta REV_{i,t}$ =   A change in the i company sales revenue between years t and t-1 i

PPE_{it} =   Gross property, plant and equipment of the i company in t year

$A_{i,t-1}$ =   The total book value of assets of the i company in t-1 year

ε_{it} =   The unknown effects of random factors

$\alpha_3, \alpha_2, \alpha_1$ =   Estimated parameters of the company

After calculating the parameters of α_3, α_2, α_1, non-discretionary accruals were determined through the following formula through the least-squares method as follows:

$$NDA_{i,t} = \alpha_1(1/A_{i,t-1}) + \alpha_2\left[(\Delta REV_{i,t} / \Delta REC)/A_{i,t-1}\right] + \alpha_3(PPE_{i,t} / A_{i,t-1})$$

Where:

$NDA_{i,t}$ =   Non-discretionary accruals of the i company in t year

$\Delta REV_{i,t}$ =   Change in the sales revenue of the i company between years t and t-1

ΔREC =   Change in receivable accounts of the i company between years t and t-1

PPE_{it} =   Gross property, plant and equipment of the i company in t year

$A_{i,t-1}$ =   The total book value of assets of the i company in t-1 year

And finally, Discretionary Accruals (DA) after determining NDA are calculated as follows:

$$DA_{i,t} = (TA_{i,t} / A_{i,t-1}) - NDA_{i,t}$$

Independent variables

Free cash flow: In the current study, Len and Plsn's model was used to determine the free cash flow of bussiness unite. Based on the said model, free cash flow is calculated through the following formula:

$$FCF_{i,t} = \left(\begin{array}{c} INC_{i,t} - TAX_{i,t} - INTEP_{i,t} - \\ PSDIV_{i,t} - CSDIV_{i,t} \end{array} \right) / A_{i,t-1}$$

Where:

$FCF_{i,t}$ = Cash Free Cash of the i company in t year

$INC_{i,t}$ = Operating profit before i company depreciation in t year

$TAX_{i,t}$ = The total tax paid by the company i in year t

$INTEP_{i,t}$ = Interest expense paid the i company in t year

$PSDIV_{i,t}$ = Preferred shareholders' dividends paid by i company in t year

$CSDIV_{i,t}$ = Ordinary shareholders' dividends paid by i company in t year

$A_{i,t-1}$ = The total assets book value of I company in t-1 year

Management ownership variable: Management ownership is measured in the form of ordinary shares owned by the board of executive directors and non-executive board of directors and the information is indirectly derived from the annual financial Afshayyat faces.

$$MSO = \frac{OSO + DSO}{TOTSHRS}$$

Where:

OSO = The number of shares owned by the board of executive directors

DSO = The number of shares owned by non-executive board

TOTSHRS = Total ordinary shares in the hands of shareholders

Control variables

The cost of short-term and long-term debt interest: According to Jensen's theory, debt contracts can impact on earnings management. Sweeney observed substantial manipulations in companies that have failure regarding their debt contracts conditions. In order to control this effect, the logarithm of short-term and long-term debt interest costs has been imported into the regression model as a control variable because the change in interest costs can be due to the changes in financial leverage.

The size of the company: According to researches by Mosez, Chlsvn and Zemy Sky the managers' motivation to manipulate earnings is higher in larger companies and vice versa in smaller companies. In other words, there is a direct relationship between the firm size and earnings management. In contrast, some believe that the larger the size of the company, the less is the earnings management because they are more likely to be investigated more accuratly. On this base, of this study, the logarithm of the total book value of the company assets has been imported as a measure to determine the size of the company as a control variable in the regression model.

Methods of data analysis and hypothesis testing: In the present study, relevant methods to analyze data and test hypotheses have been considered as follows:

- Excel Excel and SPSS software have been used according to Jones's adjusted mode in order to estimate the parameters of to determine the discretionary accruals
- Multivariate linear regression method has been used to test the research hypothesis and the test P-Value (sig.) based on cumulative data has been used to test the correlation between variables and the regression model has been used to test the research hypothesis as follows:

$$DA_{i,t} = \beta_0 + \beta_1 FCF_{i,t} + \beta_2 MSO_{i,t} + \beta_4 FCF_{i,t} \times MSO_{i,t} + MSO_{i,t} + \beta_6 SIZE + \beta_7 INTEXP_{i,t}$$

Where:

$DA_{i,t}$ = discretionary accruals of i company in t year

$FCF_{i,t}$ = Free cash flow of i company in t year

MSO = management ownership for ordinary shares owned by the Board of Executive Directors and Non-Executive Board will be measured.

$SIZE_{i,t}$ = The logarithm of the book value of total assets of i company in t year

$INTEXP_{i,t}$ = The logarithm of the total cost of short-term and long-term debt interest of i company in t year

$SIZE_{i,t}$ = The logarithm of total assets book value of i company in t year

Community sample

Statistical society: The target population in this study consisted of all companies from 1388-1392 shares on the Tehran Stock Exchange has been accepted.

Statistical population and sample

Statistical population: The target population in the current study consisted of all firms which their shares were accepted from 2009-2013 on the Tehran Stock Exchange.

Statistical sample: In the current study, a systematic elimination sampling method was used. Companies with the following conditions have been chosen and examined and the companies that did not have the conditions were removed from the target population:

- By the end of 2013, the companies should be listed on Tehran Stock Exchange and have not been out during the years 2009-2013 from Tehran Stock Exchange
- The companies have not changed their fiscal year during the years 2009-2013
- The companies need to be manufacturing
- The company financial year need to end in 29 March of each year
- Since the company's growth to be determined requires the stock market value to be determined, the company shares must be traded at least once by the end of March each year

Among the surveyed population which were the companies listed in the Tehran Stock Exchange, the number of 104 companies that were qualified based on the above conditions were chosen as the statistical sample of the present research. Because each company has 5 sets of financial information extracted during the years 2009-2013; so, the total observations number of the company year is about 520 cases.

Statistical tests: Inferential statistics used in the present study include:

Kolmogorov-Smironov: To check the normal distribution of variables, Kolmogorov-Smirnov test was used to test with the explanation that Kolmogorov-Smirnov test is a distribution compliance test for quantitative data.

In the SPSS Software, the significance level to evaluate the test will be provided. If this value is less than error level, H_0 will be rejected; otherwise, there is no reason to reject this hypothesis. If the H_0 is rejected, it means that the variables distribution is not normal. But, if the significance level is greater than á value, then the null hypothesis is accepted and the alternative hypothesis is rejected. Then, it can be said that the variables are normally distributed.

- H_0: the variable follows a normal distribution
- H_1: the variable does not follow a normal distribution

Regression testing: Regression testing will be used to investigate the effect of the independent variable on the dependent variable.

According to that the number of independent variables in the current study was more than two, multivariate linear regression model was used to test the hypothesis, a method which in fact illustrated the simultaneous effect of several independent variables on the dependent variable. So, the multiple regression analysis is conducted for each of the variables according to the following relationship:

$$\begin{cases} H_0 : b = 0 \\ H_1 : b \neq 0 \end{cases}$$

According to the respective test for each variable, the null hypothesis is accepted if b = 0 and indicates that there is no significant relationship between the two variables. if b≠0, the null hypothesis is rejected which means that there is a significant relationship between the two variables. So, linear multiple regression equation will be in the following equation:

$$\left. \begin{array}{l} Y_1 = \alpha + b_1 x_1 + b_2 x_2 + ... + b_7 x_7 \\ Y_2 = \alpha + b_1 x_1 + b_2 x_2 + ... + b_7 x_7 \end{array} \right\} \rightarrow Y = Y_1 + Y_2$$

Where:
Y = The dependent variable
xi = The independent variable
bi = Angel factor which is calculated through the following equations
α = Width of origin which is calculated through the following equations:

$$b_i = \frac{\sum (x_1 - \overline{x})(y_i - \overline{y})}{\sum (xi - \overline{x})^2}$$

In all of the tests, the null hypothesis is accepted if the significance level >0.50. After multivariate regression test, if the null hypothesis will be accepted, then the regression model feasibility level will be stated using R^2. In fact, R^2 states how much the dependent variable is affected by the independent variable.

Durbin-Watson d-test: One of the assumptions considered in regression is the independence of errors (the difference between the actual values and the values predicted by the regression equation) of each other. If the errors independence hypothesis is rejected and errors are

correlated with each other, there is no possibility to use regression. In order to investigate the independence of errors of each other, Durbin-Watson test was used. If the Durbin-Watson is posited in the range of 1.5 or 2.5, H_0 test (no correlation between errors) will be accepted and otherwise, H_0 is rejected, there is the correlation between errors (Momeni and Asadi, 2015).

RESULTS AND DISCUSSION

In this study, the data about 104 companies forming our statistical samples were analyzed during the period of 2009-2013 to examine the relationship between variables to test the hypothesis. The collected data was calculated and analyzed using Excel and SPSS softwares.

The deduction was based on the significance level of p-value or significant Level so that when the probability or significance level was <0.05, the null hypothesis is rejected at the confidence level of 95%.

Descriptive statistics: In the descriptive statistics section, data analysis was carried out using measures of central tendency such as mean, median and dispersion indices such as standard deviation, skewness and kurtosis. The mean value indicates the data average. The median indicates that 50% of the data is less than the middle number and 50% is higher than the middle number. The mean value closeness to that of median indicates the data symmetry. Standard deviation indicates the dispersion and finally, skewness is the data symmetry index. Calculation of this data is shown in Table 1.

According to the above Table 1, all the variables may be examined in regard to the reevant indicators from statistical point of view. The above table shows that the studied variables have what kind of characteristics, the first row of the table states that the number of all data for all variables is 520. The second row shows the collected variables avarage distinctively that for example the average of earnings management (DA) is 0.052171. The theird row shows standard deviation of the data. As can be seen, the variable of free cash flow variable-ownership

management has the lowest standard deviation (0.082067) compared to the average of the data. The fourth row indicated variance and variables dispersion around the mean to show that the DA variance is the number 0.031123 and the variable of cash free flow-ownership management has the least variance. The fifth and seventh rows indicate the data skewness and kurtosis level with respect to the normal bell-shaped curve that the variable of cash free flow-ownership management has the highest skewedness (0.781722) and kurtosis (2.518473). As well, the earnings management variable with 0.23827 has the least kurtosis and the MOS variable with -0.99432 has the lowest skewedness.

In the last two lines, the highest and lowest observations regarding the data have been reported. The highest and the lowest values of DA were respectively 0.30192 and 0.43187.

Normal distribution of the dependent variable: Normality of the residuals of the regression model is one of the regression assumptions that represent the regression tests validity.

Followingly, normality of the dependent variables distribution was investigated using Kolmogorov-Smirnov test since normality of the dependent variables leads to normality of the model residuals (the difference between the estimated value and actual values). So, it is necessary to control the normality of the dependent variable befor the parameters estimation and in case that this condition is not established, a suitable solution would be taken to normalize them (including conversing them). The null hypothesis and the alternative hypothesis in this test can be written as follows:

H_0 = The data follows normal distribution for the dependent variable of DA

H_1 = The data dose not follow normal distribution for the dependent variable of DA

Based on Kolmogorov-Smirnov test results and taking into consideration the significance level compared

Table 1: Variable describing indices, central indices, dispersion indices and distribution form indices statistics

Variable/indices	DA	FCF	MOS	FCF×MSO	INTEXP	INTEXP	SEIZ
Numbers	520	520	520	520	520	520	520
Mean	0.052171	0.023116	0.712268	0.061734	4.310101	4.310101	5.321039
Median	0.032432	0.054929	0.712322	0.039433	4.543806	4.543806	5.874324
Standard deviation	0.142178	0.119186	0.216427	0.082067	0.932382	0.932382	0.624329
Variance	0.031123	0.054639	0.062912	0.008432	0.924372	0.924372	0.484321
Skewness	0.365478	0.274382	-0.99432	0.781722	-0.53241	-0.53241	0.682314
The standard error coefficient of skewness	0.107938	0.107938	0.108359	0.108359	0.108148	0.108148	0.107938
Elongation	0.23827	2.082387	0.301231	2.518473	1.34291	1.34291	0.359821
Minimum	-0.30192	-0.55342	0	-0.33181	1.343568	1.343568	4.721456
Maximum	0.43187	0.571635	0.93218	0.451647	6.681738	6.681738	7.154484

Table 2: Normal distribution of the dependent variable

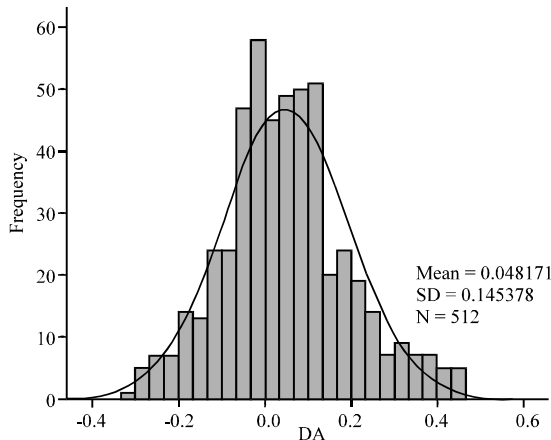| Test name	Statistics value	Significance level	Consequence
Kolmogorov-Smirnov	1.32	0.068	DA data is normal

Fig. 1: Normality of distribution of the dependent variable of DA

to α (0.05<0.068), the null hypothesis is not rejected so the data related to the variable of earnings management are normal (Table 2).

In the Fig. 1, normality of distribution of the dependent variable of DA is evident, therefore, the model remainings will be normal.

Multiple regression model: To examine the relationship between several independent variables opposite the dependent variable, the most appropriate tool is using multiple regression model.

$$DA_{i,j} = \beta_0 + \beta_1 FCF_{i,t} + \beta_3 MSO_{it} + \beta_3 FCF \times$$
$$MSO_{i,t} + \beta_4 SIZE + \beta_5 INTEXP_{i,t} + \epsilon_{it}$$

Where:

ϵ_{it} = Random error

$\beta_0, \beta_1, \beta_2, ..., \beta_5$ = The model parameters which respectively represent the slope and intercept

In this model, the null hypothesis and the alternative hypothesis are as follows:

$$\begin{cases} H_0 : \beta_1 = \beta_2 = ... = \beta_5 = 0 \\ H_1 : \beta_1 \neq 0 \quad i = 1, 2, ..., 5 \end{cases}$$

Where:

H_0 = There is no significant model

H_1 = There is a significant model

Table 3 shows the results of significance test of the regression model which evaluates the appropriateness of the proposed model, the F probability value (or significance) is equal to 0.009. This value is <0.05. Therefore, the null hypothesis is rejected at the confidence level of 95% that is at the confidence level of 95% there is an appropriate model.

In Table 4, the coefficient of determination is only equal to 038/0 which means that there is only about 3.8% of the dependent variable changes are explained by the independent variables. This index shows the intensity of the relationship between the variables. It is one of the assumptions of errors independence regression. If the hypothesis of errors independence regression will be rejected and the errors are not correlated with each other, there is no possibility to use regression. Durbin-Watson statistic is used to evaluate independence of errors from each other that if the value of Durbin-Watson will be in the range of 1.5-2.5, the hypothesis of correlation between errors is rejected and regression can be used. As can be seen in Table 4, the Durbin-Watson statistic is 1.713 which indicates the lack of correlation between errors (errors independence from each other). In Table 5 of β coefficients estimation, these coefficients test has been presented using statistics t-partial.

As seen in Table 5, the snificance level for variables of FCF, FCF×MSO, INTEXP is <0.05. As well, the significance level of MSO variable is <0.05. So, with regard to that the significance level of SIZE is >0.05, it is removed from model then fits it again. The following table is β coefficients estimation with SIZE variable is removed (Table 6).

Testing hypothses: the research hypotheses have been formulated as follows:

- The main hypothesis: management ownership impacts on the relationship between free cash flow and earnings management
- The first secondary hypothesis: high management ownership impacts on the relationship between free cash flow and earnings management
- The second secondary hypothesis: Low management ownership impacts on the relationship between free cash flow and earnings management

Originally, the correlation test (Pearson correlation coefficient) is used to prove the linear correlation between earnings management and free cash flow because this scale measure the linear correlation between the two variables. Based on Table 6, the model is as follows:

$$DA_{i,t} = \beta_0 + 0.427 FCF_{i,t} + 0.098 MSO_{i,t} -$$
$$0.425 FCF \times MSO_{i,t} - 0.12 INTEXP_{i,t} + \epsilon_{it}$$

Table 3: Results of regression analysis

Test name	Number	F-statistics value	Significance level	Consequence
Variance analysis	520	3.234	0.009	The model appropriateness presented

Table 4: Results of variance analysis

Multiple correlation coefficients	Determination coefficient	Modified determination coefficient	Standard error of estimation	Durbin-Watson statistic
0/195	0.038	0.025	0.122028	1.713

Table 5: β coefficients estimation

Variables	Nonstandardized coefficients		Standardized coefficients β	t statistics	Snificance level
	β coefficients	SD			
Fixed coefficients	-0.027	0.062	-	-0.345	0.725
FCF	0.482	0.176	0.421	2.579	0.010
Mso	0.053	0.023	0.081	1.410	0.046
FCF×MSO	-0.569	0.238	-0.411	-2.122	0.008
INTEXP	-0.018	0.007	-0.123	-2.625	0.009
SIZE	0.014	0.011	0.063	1.325	0.186

Table 6: β coefficients estimation by removing SIZE variable

Variables	Nonstandardized coefficients		Standardized coefficients β	t-statistics	Snificance level
	β coefficients	SD			
Constant	0.078	0.038	-	2.215	0.033
FCF	0.424	0.155	0.427	2.128	0.008
Mso	0.063	0.035	0.098	1.328	0.083
FCF×MSO	-0.641	0.227	-0.425	-2.769	0.005
INTEXP	-0.017	0.007	-0.120	-2.590	0.033

According to Pearson correlation test and regarding the significance level compared to α (0.05<0.084), the null hypothesis is not rejected which indicates there is no significant relationship between earnings management and free cash flow (Table 7).

But in the following, multiple regression analysis is presented because due to examination of the pairwise relationship in correlation test (without controlling for other variables) the effects of other factors are not taken into consideration. As the result, multiple regression analysis is necessarily used to examine the significant relationship.

Therefore, two variables of earnings management (DA) and Free Cash Flow (FCF) have significant relationship based on regression analysis (Table 6). This relationship is direct and the degree of correlation is equal to 0.427. However in relation to interpretation of this value, it can be said that, provided controlling for other variables of the model, for one unit of increase in FCF, DA value increases 0.427 units. So, it can be concluded that the hypothesis is confirmed.

First secondary hypothesis: To examine the first and second research hypothesis, the companies first have been classified into two groups (companies with high and low management ownership). Then, the correlation between earnings management and free cash flow discussed in these groups. The obtained results from Pearson correlation between earnings management and free cash flow in companies with high management

ownership have been expressed in Table 8 with regard to the control variables. According to Pearson correlation test and regarding the significance level compared to α (0.032<0.05), the null hypothesis is rejected which indicates there is a significant relationship between earnings management and free cash flow.

Based on the results in Table 8, it can be said that there is a positive and significant relationship between earnings management and free cash flow in companies that the percent of shares owned by the executive and non-executive board is high. As percentage of the shares owned by executive and non-executive board will be higher, actually, the directors use free cash flow to manage earnings.

Second secondary hypothesis: To examine the first and second research hypothesis, the companies with low management ownership were separated from other companies and the relationship between earnings management and free cash flow in the company was examined. To investigate this relationship, the correlationtest (Pearson correlation coefficient) was uses, like the first hypothesis, because this scale measured the linear relationship between the two variables.

According to Pearson correlation test and regarding the significance level compared to α (0.05<0.615), the null hypothesis is not rejected which indicates there is no significant relationship between earnings management and free cash flow.

Table 7: Pearson correlation coefficient

Test name	Variables	Statistics value	Significance level	Consequence
Pearson correlation	Earnings management Free cash flow	0.034	0.084	There was no significant relationship between the two variables

Table 8: Pearson correlation coefficient test for the first hypothesis

Test name	Variables	Statistics value	Significance level	Consequence
Pearson correlation	Earnings management Free cash flow	0.32	0.032	There was a significant relationship between the two variables

Table 9: Pearson correlation coefficient test for the second hypothesis

Test name	Variables	Statistics value	Significance level	Consequence
Pearson correlation	Earnings management Free cash flow	0.022	0.615	There was no significant relationship between the two variables

Table 10: Hypotheses testing summary

The author hypothesis	Confirming or rejecting of the hypotheses
The first secondary hypothesis: high management ownership impacts on the relationship between free cash flow and earnings management	Confirmed
The second secondary hypothesis: Low management ownership impacts on the relationship between free cash flow and earnings management	Rejected

Table 11: Summary of the present study and other studies results

The author hypothesis	Confirming or rejecting of the hypotheses	Consistent with other studies
The first secondary hypothesis: high management ownership impacts on the relationship between free cash flow and earnings	Confirmed	Mehranee and Bagheri (2009), Ascioglu *et al.* (2012) and Etemadi and Shafakheibari (2011)

Regarding the second hypothesis test results, it can be said that there is no positive and significant relationship between earnings management and free cash flow in companies with low management ownership. In fact, results of the first and second research hypothesis suggest that management ownership has significant impact on the relationship between earnings management and free cash flow (Table 9).

In Table 10, it has been reffered to the confirming or rejecting of the hypotheses. Table 11 summarizes the results of the present research and other studies.

Hypothesis testing results

Results of the first hypothesis testing: Results show the first hypothesis seeks to find the relationship between items of earnings management and free cash flow. According to pearson correlation test and considering the significant level compared to α (0.651<0.05), the null hypothesis is rejected which indicates that there is a significant relationship between earnings management and free cash flow. In companies where the shares owned by executive and non-executive board are high, there is a positive and significant relationship between earnings management and free cash flow. In fact, as the percentage of shares owned by executive and non-executive board directors is higher, the directors use free cash flow to manage earnings.

Results the present study are in line with the results obtaned by Bagheri (2009), Asciioglu *et al.* (2012) and Etemadi and Shafakheibari (2011).

Results of the second hypothesis testing: According to Pearson correlation test and considering the significant level compared to α (0.05<0.615/0), the null hypothesis is not rejected which indicates that there is no significant relationship between earnings management and free cash flow.

The results of this hypothesis are consistent with the results of research conducted. Frdnyand Giuli and Stvay in their study concluded that the positive relationship between free cash flow and low levels of audit fees in companies with low/high management ownership are respectively stronger and weaker. Because the relationship between audit fees and earnings management is an inverse relationship, so, there is a weaker relationship between free cash flow and earnings management in companies with low.

Generally, results of the first and second research hypothesis suggest that managment ownership significantly impacts on earnings management through free cash flow. The results show that overally the companies free cash flow can be considered as an incentive to manage earnings; as well, in companies with high management ownership this relationship is positive and significant.

CONCLUSION

Research findings showed that in general ownership management had a significant impact on the relationship between free cash flow and earnings management.

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