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To Link this Article: <http://dx.doi.org/10.6007/IJARAFMS/v4-i3/978>

DOI:10.6007/IJARAFMS /v4-i3/978

Received: 10 July 2014, **Revised:** 11 August 2014, **Accepted:** 29 August 2014

Published Online: 16 September 2014

In-Text Citation: (Karimi et al., 2014)

To Cite this Article: Karimi, F., Foladi, M., & Shirazi, N. (2014). The Effect of Surplus Free Cash Flow on the Relationship between the Board Structure and Earnings Quality of Companies Listed on Tehran Stock Exchange. *International Journal of Academic Research in Accounting Finance and Management Sciences*, 4(3), 37–47.

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Vol. 4, No. 3, 2014, Pg. 37 - 47

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The Effect of Surplus Free Cash Flow on the Relationship between the Board Structure and Earnings Quality of Companies Listed on Tehran Stock Exchange

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Abstract

In this study, is evaluated the effect of surplus free cash flow on the relationship between board structure and earnings quality of listed companies in Tehran Stock Exchange. This study attempts to empirically examine the role of surplus free cash flow (SFCF) as a moderator on the relationship between board structure and earnings quality. The statistical society this study consisted of all companies listed on Tehran Stock Exchange during the period 2008 to 2012 that after applying the restrictions according to of the systematic write-off method were available the number of 110 companies as statistical sample. Financial data of companies surveyed, is extracted from the existing database inclusive software and Informational sites the Tehran Stock Exchange and for data analysis is used Eviews and Excel software. In this study, from multivariate regression to test the hypotheses is applied using hybrid data method. The results show that the hypothesis of the first, third and fifth of the relationship between board structure has a significant relationship with reported earnings quality. And the second and fourth hypotheses the effect of surplus free cash flow on the relationship between board structure (board size and board independence) there is a significant relationship with the earnings quality. But in the sixth hypothesis the effect of surplus free cash flow on the board structure (independence Chairman and CEO) and earnings quality is effective, will be rejected.

Keywords: Earnings Quality, Governance Structure, Surplus Free Cash Flow

Introduction

The task of accounting system, financial reporting. Among the various items that are offered reporting accounting, earnings are of particular importance. Calculation of earnings, affected revenue realization principles and costs and revenues matching, as well as are placed methods and estimates of accounting. Hence, it may be arisen doubts to the accuracy and reliability of corporate presented earnings. Since earnings are one of the criteria for

determining premium and promotion managers, management tend by manipulating to profit increase the amount of your premium. For this reason, the quality of earnings subject of interest is located for investors and other users of financial reports.

There are conflicts of interest between managers and owners besides the cases such as promotion and premium directors, underlying earnings management. scandal and bankruptcies some of the corporate world took place in the early twenty-first century due to earnings manipulation, role and importance of the concept of corporate governance made clear over the past (Redhwan & Ismail, 2012). Corporate Governance, seek the interest of different beneficiary groups in the company, because actions of its regulatory different mechanisms, which reduce earnings management opportunities and enhance the quality of reporting Earnings (Kordtabar and Rasayan, 2010). Governance Regulations in Iran, stated that board according to the constitution is elected by the general assembly of shareholders. Board members by shareholders at the annual general assembly are elected for two-year period. At least, corporate board should have seven members, that the majority of board members must be independent. A director is not significant associated with a company; independent qualified will be to serve in the board and its committees.

According to agency theory, the economic unit managers in companies with high free cash flow and low growth opportunities investment, often tends to invest in additional projects or even projects that have negative net present value (negative NPV) lead to investments unwisely of free cash flow and to conceal and cover the effects of investments that do not maximize shareholder wealth, the use of discretionary accruals multiplier earnings and manage the company's earnings which cause high agency costs that conflicts of interest creates between the owner and administrator (Jensen & Meckling, 1976).

Managers maybe use accounting procedures to cover the negative effects of projects, increase reported earnings. Managers manipulate reported earnings to achieve their personal goals and so-called can management, while investors therefore reported earnings take undesirable investment decisions. Thus, earnings management lead to a conflict of interest between managers and investors and it ultimately will be agency costs and the situation in will be increased in companies with low growth opportunity and high free cash flow, because of the companies low free cash flow and high growth opportunities, possibly existing cash managers invest on projects with positive net present value and problem of agency costs is not appear and would not be need to mechanisms governance. Therefore, the concepts and issues raised can be through the agency theory and issues related to corporate governance system is analyzed and discussed.

The board structure is defined as a collection of individuals who in order to do well in shaping the various activities of the affair of organization in order to overcome the problems, while cooperate participation together to achieve the expected goals. Checking behavior of board members and the relationship of it with other activities and variables and the contents accounting attracted in recent years the attention of many researchers accounting. Therefore an appropriate board structure is formed to lack representation of stress caused by the intellectual non-convergence between managers and owners, and reduce conflicts of interest, prevent opportunistic actions of managers and thus guarantee the accuracy of accounting and financial information. In addition to shareholder interests are aligned with the interests of directors, investors confidence attract in the capital markets and thereby more investors will be attracted to these markets (Redhwan & Ismail, 2012). On the other hand, according to agency theory where managers seek to maximize their wealth, this provides background that the free cash flow benefit to your advantage (William Sun & Astalz, 2006).

Jensen believes that the directors due to conflict of interest may have invested the free cash flow in projects with negative net present value, So in the short term to provide some of your personal interests. (Jensen et al., 2004). For hiding the negative effects of such investment, managers are used likely to manipulate earnings to increase productivity (Cheung *et al.*, 2004). Such manipulation may lead to a false picture of the financial status of the company; this makes it possible to do a better financing an inefficient market, cash benefits and more non-cash to be followed for managers.

Cheung *et al* (2005) the study entitled "management earnings, free cash flow and external of organizational monitoring," cites that management companies with slight growth and high free cash flow to compensate its low or negative earnings, which inevitably along with the negative projects has a negative net present value, they use discretionary accruals increaser earnings. In his research is tested role of independent auditors with high-quality and institutional shareholders in reducing relation surplus free cash flow and discretionary accruals. He concluded that high-quality auditors and institutional investors, who have substantial equity, are adjusted relationship between free cash flow and discretionary accruals. He says that free cash flow, coupled with low investment opportunities arises as one of the main agency problem and managers create in this case costs for the shareholders that reduce the shareholders wealth and if external and outside the organizational supervision stakeholders to be effective, this opportunistic behavior will be limited.

Authority of act managers in using the principles of realization and matching and estimate and predict among the factors that is affected on the earnings quality. On the one hand, due to their knowledge more about the firm, is expected to prepare and present information in a way to the best reflects the company's status. On the other hand, may reasons such as the company's retained, receive premium and other factors, director wanted or unwanted the company's situation seems desirable. As a result, the earnings quality corporate of reporting of foundations and profits are affected by it will be at the discretion of managers (Khajavi and Nazemi, 2005).

This study tries to answer the question whether surplus free cash flow effects on the relationship between board structure and earnings quality.

Board Independence and Earnings Quality

Compared with insiders and affiliated directors, independent directors have no other relationship with a firm they work for except that of being directors in the board. The existence of independent directors in the board is expected to restrain the managerial self-serving behavior and to accordingly ensure the reporting earnings numbers of high quality. In light of this notion, empirical studies conclude that the reported earnings quality is enhanced as the proportion of independent directors increases (Anderson *et al.*, 2003; Cho & Rui, 2007; Dimitropoulos & Asteriou, 2010; Petra, 2007). However, based on the agency theory allegation, the direct hypothesis of this paper (stated in an alternative form) is as follows:

H1: The board independence is positively related to the earnings quality.

The empirical evidence contained in the study of Lee and Lee (2009) indicates that the sample firms value increases when the percentage of independent directors sitting in the board is high and this relationship is more pronounced in firms with excess cash and entrenched managers. Moreover, compared with high-growth firms, Lafer (2002) found a positive and significant relationship between board independence and firm value for firms with low growth opportunities. While the former finding confirms the agency conflict associated with the existence of free cash, the later result is consistent with the role of growth

in the FCF agency problem. Drawing on these findings, this study expects that independent directors will more closely monitor the managerial discretion over firms' cash and that the relationship between board independence and earnings quality will be more pronounced in firms with high SFCF. Therefore, the hypothesis (stated in an alternative form) is as follows:

H2: The board independence interacts with SFCF to positively influence the earnings quality.

Board Size and Earnings Quality

The board size is an important element that influences the effectiveness of the board's oversight duties. It is believed that smaller boards are normally easier to ordinate, quicker in making decisions, less likely to have free-rider problems, and less likely to oppose an innovation (Dimitropoulos & Asteriou, 2010). Smaller boards also facilitate the influential exchange of idea between a firm and its directors, and they are less likely to exacerbate the coalition costs among board members (Vafeas, 2000). In tandem with these assertions, Cho and Rui (2007); Vafeas (2000) provided the evidence that firms with smaller boards experienced earnings numbers of high quality.

In addition to the significant findings discussed earlier, studies on earnings quality have also produced insignificant findings. For example, Dimitropoulos and Asteriou (2010); Firth et al (2007); Sarikhani and Ebrahimi (2011) provided the evidence that board size had no significant influence on the reported earnings quality. However, following the agency theory assertion, the direct hypothesis (stated in an alternative form) is as follows:

H3: The board size is negatively related to the earnings quality.

Independent directors in firms with larger boards are less expected to effectively fulfill their monitoring duties, as they encounter with difficulties to express their opinions and specifically identify their responsibilities (Vafeas, 2000; Dimitropoulos & Asteriou, 2010). In the East Asian context, Lee and Lee (2009) provided the evidence that larger boards of firms with excess cash were more likely to exacerbate the managers' capability of investing the excess cash in negative return projects that would eventually result in a lower valuation of these firms. Therefore, the authors expect independent directors in smaller boards to effectively alleviate the FCF agency problem and the relationship between board size and earnings quality will be more pronounced in firms with high SFCF. Based on this expectation, the hypothesis (stated in an alternative form) is as follows:

H4: The board size interacts with SFCF to negatively influence the earnings quality.

Board Chairman and Earnings Quality

The independence of the board chairman is another mechanism that affects the monitoring role of board of directors. It is expected that investing the power of chairman and CEO in an individual (i.e., CEO duality) compromises the board independence and thereby enables managers to seek private interests in lieu of shareholders' interests (Chang & Sun, 2010; Firth et al., 2007; Jensen, 1993). Consistent with these allegations, evidences contained in the studies of Anderson et al (2003); Firth et al (2006); Gul and Lai (2002) empirically document that the quality of the reported earnings deteriorates as the two roles of chairman and CEO are combined.

However, as previously mentioned, this study examines whether the chairman independence improves the earnings quality. Based on the expected positive contribution of independent chairman, the direct hypothesis (stated in an alternative form) is as follows:

H5: The board Chairman is positively related to the earnings quality.

In the FCF literature, Chi and Scott Lee (2010) provided the evidence that only in firms with high FCF was the negative relationship between CEO duality and firm value statistically significant. Moreover, Lee and Lee (2009) concluded that, compared with other firms, a negative and significant relationship between firm value and CEO duality was more pronounced in firms with excess cash and entrenched managers. On the other hand, Lasfer (2002), by partitioning the sample firms into low and high growth opportunities, empirically documented a positive and significant relationship between chairman independence and firm value only for firms with low growth opportunities. Based on the literature, this study expects that the existence of independent chairman serving in the board is expected to restrain the management incentives over firms' cash and that the relationship between board leadership and earnings quality will be more pronounced in firms with high SFCF. Thus, the hypothesis (stated in an alternative form) is as follows:

H6: The board Chairman interacts with SFCF to positively influence the earnings quality.

Since the surplus free cash flow is an issue of importance in the last decade, this study to examines the effect of free cash flow will be discussed on the relationship between board structure and earnings quality of listed companies in Tehran Stock Exchange.

Research Design

In this study, the dependent variable, earnings quality, is measured using the Penman model. And also using assessment the surplus free cash flow the function of interaction between growth opportunities and free cash flow as an indicator of better decisions Board structure on earnings quality. Because high free cash flow management form unwise to invest and such behavior to cover by manipulating financial statements (Lehn and Poulsen, 1989). So, the influence board structure by surplus free cash flow on earnings quality are assessed in the below model. According to the research hypothesis of a multivariate regression model will be used to test the first to sixth hypotheses.

So to follow (Redhwan & Ismail, 2012) model used in this study is stated as follows:

$$\text{EARN}_{it+1} = \beta_0 + \beta_1 \text{EARN} + \beta_2 \text{EARN} * \text{SFCF} + \beta_3 \text{EARN} * \text{BDIND} + \beta_4 \text{EARN} * \text{CHIND_DUM} + \beta_5 \text{EARN} * \text{BDSIZE} + \beta_6 \text{EARN} * \text{SFCF} * \text{BDIND} + \beta_7 \text{EARN} * \text{SFCF} * \text{CHIND_DUM} + \beta_8 \text{EARN} * \text{SFCF} * \text{BDSIZE} + \beta_9 \text{EARN} * \text{LNFSIZE} + \beta_{10} \text{EARN} * \text{DEBT} + \beta_{11} \text{EARN} * \text{LOSS} + \beta_{12} \text{EARN} * \text{CAP} + \epsilon$$

(1)

Where EARN_{it+1} is the one-year-ahead net income before extraordinary items are scaled by the beginning of total assets; EARN is the current net income before extraordinary items are scaled by the beginning of total assets; SFCF is a binary variable with the value of one if FCF (see Equation [2]) is above the sample median for the year and the growth prospects (MBR) is below the sample median for the year, and zero if otherwise; BDIND_DUM is a binary variable with the value of one, if board independence equals or more than 33%, and zero if otherwise; BDSIZE is the total number of directors on the board; CHIND is a binary variable with the value of one (zero if otherwise), if the board chairman is an independent director;

LNFSIZE is the natural log of book value of the total firm assets; DEBT is the long-term debt to the total assets; LOSS is a binary variable with the value of one for the loss firms, and zero for other firms; CAP is the depreciation, depletion, and amortization expense scaled by the total sales; and ϵ is the error term.

Board independence, are considered as broader gauges for chairman board. When the percentage of directors independent greater than 33% is considered a benchmark for optimal performance company (Ponnu, 2008).

In order to assess surplus free cash flow is used the operational definitions of free cash flow and growth opportunities companies. Companies that have high free cash flow, but they have not situations high growth, companies are that we know they have high surplus free cash flow. Free cash flow as well as other items and accounting standards have the advantage of being free cash flow is real and easy to understand, because cash flow is not affected by accounting rules. Further, evaluation using free cash flow, the explicit application of the current known techniques. This study uses the market-to-book ratio to represent growth (Adam and Goyal, 2008).

According to Lehn and Poulsen free Cash Flow Company is operating income before depreciation after deducting payments for taxes, interest expense and Dividends paid to shareholders. Following this study (Lehn and Poulsen, 1989) the following model are used for the determination of free cash flow commercial units:

$$FCF_{it} = (INC_{it} - TAX_{it} - INTEXP_{it} - OSDIV_{it}) / TA_{it-1} \quad (2)$$

Where *FCF* is the free cash flow; *INC* is the operating income before the depreciation; *TAX* is the income taxes; *INTEXP* is the gross interest expense of the short- and long-term debt; *OSDIV* is the total amount of ordinary dividends; and *TA_{it-1}* is the total book value of assets at the beginning of the fiscal year. In this study, to test the hypothesis was used multivariate linear regression model. Statistical methods used in this study are using panel data approach. Then the panel data methods and tests associated with it are described. Then they are described tests significance of the all models and significance of the independent variables. Finally, the tests description related to assumptions of the classical regression, and then they are expressed decisions about how to accept or reject the research hypotheses. In this study, data analysis software is used Eviews and Excel.

Descriptive Statistics

At first, descriptive statistics of the data are calculated. Table (1) shows the descriptive statistics of model variables, which include information about the mean, median, maximum and minimum, skewness and kurtosis, and etcetera.

Table 1
Descriptive Statistics for Model Variables

LNSIZE	EARN1	EARN	DEBT	CAP	BDSIZE	BDIND	Variable parameter
5.9	98.7	84045	0.1	60137.2	5.1	0.2	MEAN
5.8	0.9	32470	0.1	13517.5	5.0	0.0	MEDIAN
8.1	4882.6	983615	6.2	1647415	7.0	1.0	MAXIMUM
4.4	-1880.7	-817216	0.0	0.0	2.0	0.0	MINIMUM
0.6	454.3	170391	0.29	141801.9	0.3	0.3	STANDARD DTVIATION
0.9	4.8	2.4	17.1	5.4	0.01	1.3	SKEWNESS
4.4	37.3	15.3	349.8	42.9	20.9	3.1	KURTOSIS

The main central index, the mean which represents balance point and distribution gravity center and good indicator to show the centrality data. For example, the mean value for board independence variable is equal to 5.1, which indicates that more data around this point has been focused. Median another indicators of central that shows the status of society. As can be seen the median of this variable 5.0 is showing that half of the data are less than this value and the other half are more than this value. Generally, dispersion parameters, normative for determining the dispersion amount from each other or their dispersion rate than the mean. The most important parameters of dispersion is the standard deviation. Among the variables long term debt to total assets the lowest rate and variable one-year-ahead net income to have the highest rate of dispersion. The rate asymmetry of the frequency curve is called skewness. If the coefficient of skewness is zero, society is completely symmetric and if the coefficient is positive, skewness to the right and if the coefficient is negative, skewness to the left. Variable the long-term debt to total assets highest asymmetry and the board independence variable lowest asymmetry than the normal distribution. Elasticity rate frequency curve than the standard normal curve is called kurtosis. Variable the long-term debt to total assets maximum kurtosis and the board independence variable is minimum kurtosis than the normal curve.

Empirical Results

In this section, research hypotheses are tested. According to the nature of the data, hypotheses are tested on the synthetic data. Before fitting the regression model and test the hypotheses, the classical assumptions model were tested and according to, given a set of assumptions model, research hypotheses are tested. The results of the analysis of data are reflected in table 2.

Table 2
Results of the analysis of data to test the hypothesis

p-value	t-statistics	Standard deviation	coefficient	Variable
0.00	9.68	10.23	98.98	C
0.71	0.37	0.002	0.001	EARN
0.00	-5.15	0.001	-0.01	EARN*SFCF
0.00	4.09	0.001	0.002	EARN*BDIND
0.02	2.29	0.000	0.001	EARN*CHIND
0.00	-6.57	0.000	-0.001	EARN*BDSIZE
0.00	3.03	0.001	0.002	EARN*SFCF*BDIND
0.38	0.87	0.0004	0.0003	EARN*SFCF*CHIND
0.00	3.72-	0.0002	0.001-	EARN*SFCF*BDSIZE
0.00	3.27	0.0003	0.001	EARN*LNSIZE
0.20	-1.28	0.001	-0.001	EARN*DEBT
0.02	-2.38	0.0004	-0.001	EARN*LOSS
0.00	-6.48	8.910	-5.809	EARN*CAP
7.36	Statistic F	0.68	R-squared	
0.00	Prob (F-statistic)	0.58	Adjusted R-squared	

According to the obtained p-value for the f-statistic is equal with zero ($p\text{-value} \leq 0.05$), hypothesis H_0 is rejected. This will show that all regression coefficients are not zero simultaneously. Thus simultaneously between all independent variables and the dependent variable there is a significant relationship.

The First Hypothesis

According to Table (2), and p-value of t-statistics for board independence variable (EARN * BDIND) is equal to zero and less than the error level of 0.05 ($p\text{-value} \leq 0.05$), the null hypothesis (assuming no the relationship between board independence and earnings quality) is rejected and thus between the independence of the board with earnings quality, there is significant relationship. Also, according to variable coefficient board independence that is positive and equal to 0.002, therefore between board independence and earnings quality is related positively. As a result, the first research hypothesis is accepted.

The Second Hypothesis

According to Table (2), and p-value of t-statistics for the interaction effect of board independence variable and surplus free cash flow (EARN * SFCF * BDIND) is equal to zero and less than the error level of 0.05 ($p\text{-value} \leq 0.05$), the null hypothesis (assuming no interaction effect of board independence and surplus free cash flow on earning quality) is rejected and thus the board independence in dealing with the surplus free cash flow affects on earnings quality. Also according to variable coefficient interaction effect of board independence and surplus free cash flow, which is positive and equal to 0.002, and therefore the board independence in dealing with the surplus free cash flow has positive impact on earnings quality. As a result, the second research hypothesis is accepted.

The Third Hypothesis

According to Table (2), and p-value of t-statistics for board size variable (EARN * BDSIZE) is equal to zero and less than the error level of 0.05 ($p\text{-value} \leq 0.05$), the null hypothesis (assuming no the relationship between board size and earnings quality) is rejected and therefore the board size with the earnings quality, there is significant relationship. Also according to the variable coefficient board size that is negative and equal to 0.001, therefore there is a negative relationship between the board sizes with earnings quality. As a result, the third research hypothesis is accepted.

The Fourth Hypothesis

According to Table (2), and p-value of t-statistics for the interaction effect of board size variable and surplus free cash flow (EARN * SFCF * BDSIZE) is equal to zero and less than the error level of 0.05 ($p\text{-value} \leq 0.05$), the null hypothesis (assuming no interaction effect of board size and surplus free cash flow on earnings quality) is rejected and therefore the board size in dealing with the surplus free cash flow affects on earnings quality. Also according to variable coefficient interaction effect of board size and surplus free cash flow, which is negative and equal to 0.001, and therefore the board size in dealing with the surplus free cash flow is a negative impact on earnings quality. As a result, the fourth research hypothesis is accepted.

The Fifth Hypothesis

According to Table (2), and p-value of t-statistics for the board duality variable (EARN * CHIND), which is equal to 0.02 and less than the error level of 0.05 ($p\text{-value} \leq 0.05$), the null hypothesis (assuming the relationship between the board duality and earnings quality) is rejected and thus between independence Chairman and CEO with earnings quality, there is a significant relationship. Also due to variable coefficient board duality that is positive and equal to 0.001, therefore there is a positive relationship between earnings quality and independence Chairman and CEO. As a result, the fifth research hypothesis is accepted.

The Sixth Hypothesis

According to Table (2), and p-value of t-statistics for the interaction effect of board duality variable and surplus free cash flow (EARN * SFCF * CHIND), which is equal to 0.38 and more than the error level of 0.05 ($p\text{-value} \geq 0.05$), the null hypothesis (assuming interaction effect board duality and surplus free cash flow on earnings quality) will be accepted, and therefore independence Chairman and CEO in dealing with surplus free cash flow does not effect on earnings quality. As a result, the sixth research hypothesis is not accepted.

Conclusion

Adjusted R^2 of the model equivalent to 0.58, which represents 58% of the variability dependent variable, is explained by the independent variables; In other words, 58% of the variability dependent variable is related to the independent variables.

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