

Corporate Governance Factors Impacting the Value of Firms Listed on the Tehran Stock Exchange

¹Ali Sarafraz Ardekani and ²Ali Fazel Yazdi

¹Department of Accounting, Payame Noor University, P.O. Box 19395-3697, Tehran, IR of Iran

²Young Researchers and Elite Club, Yazd Branch,
Islamic Azad University, Shoahadegomnam Road, 89195/155 Yazd, Iran

Abstract: Corporate governance has been a matter of debate over the recent years, so that corporate governance is known as one of the effective mechanisms of capital market by most regulatory agencies. The present study seeks to examine the impact of some corporate governance mechanisms on firm's value. The corporate governance mechanisms include board size, board composition, institutional ownership, financial knowledge of the board, CEO duality, state-ownership and managerial ownership. The population is composed of the firms listed on the Tehran Stock Exchange. Filtering technique is used to select the sample. Furthermore, multivariate regression method, Analysis of Variance (ANOVA) and tree regression methods are used to test the hypotheses. The findings reveal that firm's value prediction is influenced by the two variables of managerial ownership and the non-executive members of the board.

Key words: Corporate governance, firm's value, institutional ownership, state-ownership, managerial ownership

INTRODUCTION

Undoubtedly, the industrial revolution, the emergence of corporations and separation of ownership and management were the most important changes over the eighteenth century. Before these changes, economic and business operations were accomplished by individuals. As a result, various stakeholders including shareholders, managers, creditors and employees gathered in corporations and formed organized financial markets in many countries. The managers held the responsibility of handling corporations because the whole stakeholders could not participate in the corporations. The shareholders and stakeholders aim to maximize the corporate benefits which is not necessarily aligned with the interests of the directors. This is the beginning point of conflict of interests (Esmaeilzadeh *et al.*, 2010).

By communicating general policies of the Article 44 of the Constitution of the Islamic Republic of Iran, the corporations are trying to promote an economic situation focused on private ownership and economic growth. Clearly, the business owners play an essential role in making strategic decisions. The decisions which could whether increase or decrease the firms' value. The present

study bridges the gap between corporate governance literature on financial and accounting fields. Governing corporations based on market values will provide the chance to achieve added value resulted from corporate governance approaches. As a consequence, integration analysis is used which fits the evaluation model. In other words, changes in corporate governance mechanisms of a firm are consistent with the changes in the firm value for a long time. Therefore, the present study seeks to identify and rank the corporate governance factors impacting firm's value.

Theoretical bases: Firm size, credit, solvency and growth rate are the measures of firm value which have been used in the prior literature; however, governance quality is a new measure introduced in the recent studies (Yeganeh and Dadashi, 2010). Corporate governance system is a set of guidelines, structures, processes and cultural norms by which the firms will achieve their objectives in terms of transparency in working processes and accountability to the stakeholders. The firms with more growth opportunities have higher enterprise values. Growth opportunity and capital structure are the effective factors of decision making at both micro and macro levels.

That is, the profit is considered as a source of finance by the firms with higher growth opportunity (Sinayi *et al.*, 2011). Ownership structure of the firms plays a significant role in determining firm's value.

There is a non-linear relationship between managerial ownership (shares held by the managers) and firm value. Monitoring managers' operations will be more difficult when the managers hold the majority of the shares. This is because holding the majority of shares helps managers resist external pressures. Those managers who are not monitored by the others hold more cash to pursue their personal interests. The net impacts of the prior items will determine the relationship between managerial ownership and cash holdings (a non-linear relationship) (Ozkan and Ozkan, 2004).

Literature review: Ahmadi and Abbasi (2011) examined the impact of CEO duality on the value of firms listed on the Tehran Stock Exchange. Their findings reveal that there is a significant relationship between CEO duality and firm value. In addition, a significant positive association is found between debt ratio and firm value. However, there is no negative relationship between firm size and firm value. Zadeh *et al.* (2012) tested the relationship between corporate governance mechanisms, firm value and economic value added.

In a study by Diyanati and colleagues, the impact of CEO tenure on firm value, agency costs and information risk has been examined. However, there is a significant relationship between CEO tenure and agency costs. Moharrami explored the relationship between investment level and value of the firms listed on the Tehran Stock Exchange. According to the findings, the investment level of the firms has a significant positive impact on the firm value. The author also concluded that ownership concentration and institutional ownership have no significant effect on firm value.

The relationship between firm value, excess value of cash and corporate governance among US firms has been tested by Fresard and Salva (2010). They suggested that the value attributed to the excess cash is essentially larger than the value of the Foreign firms listed on the US Stock Exchange.

Kusandi (2011) found a positive link between these variables. Ammann *et al.* (2011) documented a direct relationship between corporate governance elements and firm value. Atique *et al.* (2011) found that the impact of controlling shareholders on firm value is stronger for the family-owned corporations. Connelly *et al.* (2012) studied the effect of ownership structure and corporate governance measures on the value of Thailand firms. Based on their findings, those firms which have not achieved optimum corporate governance measures have lower Tobin's Q.

Chen suggested that the managers decrease their ownership percentage when the firms deviate from the optimal level. However, when the ownership percentage of the managers increases, the firm value moves toward the optimal level. Leung and Cheng (2013) examined the relationship between corporate governance mechanisms and the value of the firms listed on Chinese Stock Exchange. The results show that the accumulated ownership of large shareholders and the CEO compensation have different impacts on the firms controlled by central and local governments.

MATERIALS AND METHODS

This is an empirical study using inductive method. The findings of this study add to the literature about corporate governance and firm value in Iran. The results of the present paper can be used in solving investment problems. The cross-section and multivariate regressions are employed to analyze the data. The required data is gathered from the related software and Tehran Stock Exchange website and compact discs of the stock exchange. The collected data are classified in computerized spreadsheets and finally processed by SPSS.

Population and sample: The population of the study is composed of the firms listed on the Tehran Stock Exchange from the beginning of 2005 to the end of 2012. The sample firms should have the following characteristics:

- To be comparable, the end of the fiscal year should be consistent with the calendar year
- There should be no changes in the fiscal year over the sample period (2005-2012)
- There should be no changes in the operations over the sample period (2005-2012)
- The financial institutions (including mutual funds, financial intermediaries, holdings and leasing) and banks are excluded from the sample
- The firms should be listed on the Tehran Stock Exchange
- The information related to the firms should be available

As shown in Table 1, the final sample is composed of 102 firms selected by filtering technique.

Hypotheses development: The following hypotheses are developed:

Table 1: Sample and population

Number of listed firms until the end of 2012	Non-listed before 2005	Inconsistent with the calendar year	Banks and financial institutions	Ceased transaction for >70 days	The remaining firms
571	166	158	47	98	102

- Board size impacts firm value
- The non-executive members on the board (board independence) impacts firm value
- Institutional ownership impacts firm value
- Board structure impacts firm value
- CEO duality impacts firm value
- State ownership impacts firm value
- Managerial ownership impacts firm value

Variables: The variables of this study are defined below:

- Dependent variable
- firm value at the end of year t (CA)
- Independent variables
- independent variables include Corporate Governance (CG) elements at the end of year (t)
- Board Size
- Non-executive members on the board
- Institutional ownership
- Board structure
- CEO duality
- State ownership
- Managerial ownership
- Control variables:
- ox^2 , Earnings before extraordinary items at the end of year (t)
- Oat: Net assets at the end of year (t)

RESULTS AND DISCUSSION

Findings:

Kolmogorov-Smirnov test (K-S): The variable of company interests is known by CA and is not normally distributed. As a result, a normal variable is defined for CA by using the equation below:

$$(1-4) \text{LNST}_{CA} = \ln(Z_E + Z_M + Z_{NA})$$

Where in it:

$$Z_E = \frac{E - \mu_E}{\sigma_E} - N(0,1)$$

$$Z_M = \frac{M - \mu_M}{\sigma_M} - N(0,1)$$

$$Z_{NA} = \frac{(NA - \mu_{NA})}{\sigma_{NA}} - N(0,1)$$

Where:

- E = Earnings before extraordinary items
- M = The market value of the equity
- NA = The net assets of the firm

Table 2: Goodness of fit of LN for the sum of the standardized variables of M,E,NA

Variables	LNSTCO
Observations	122
Parameters of normal distribution	
Mean	0.51
SD	
The greatest distance	
Absolute value	1.646
Positive	0.064
Negative	-0.108
Z-statistic of Kolmogorov-Smirnov test	1.194
Two tailed Sig. level	0.115

Table 3: Parameters of regression model

Models	Correlation coefficient	R ²	Adj. R ²
1	a0.224	0.050	0.042

Table 4: Regression coefficients

Models	Non-standard coefficients		Standard coefficient B		Sig. level
	B	SD	β	t-statistics	
Constant value	1.212	0.317		3.828	0.000
Non-executive	0.266	0.108	0.224	2.258	0.015
members of the board					
Managerial ownership	0.158	0.213	0.117	1.665	0.049

Based on K-S test, the normality of LNSTCA is confirmed (Table 2). Two tailed Sig. level.

Modelling linear regression: Results of stepwise multivariate linear regression model reveal that non-executive board members and managerial ownership are significant for firm value. Based on Table 3, the correlation coefficient is 0.224, R² is 0.05 and adjusted R² is 0.042. Regardless of the low level of these coefficients, the model is significant.

Table 4 represents the coefficients of the regression model. As shown in Table 4, the non-executive board members and managerial ownership are the independent variables which significantly influence the dependent variable. The significance level is >98%. The adjusted regression model is defined below: +0.158M LNSTCA = 1.212-0.266NO1.

NO1 is the number of the non-executive members on the board and M is the managerial ownership. As it seems, the firm value grows by increasing the number of non-executive members on the board.

Cart Regression model: This model does not require parametric elements of the model. As shown in Table 5,

Table 5: Descriptive statistics of CART Model

Variables	Models
Fitting in decision tree model	RT
The dependent variable	Cooperation Asset
The independent variable	GOV) percent of the institutional investment, number of irresponsible governances, number of responsible governances, ownership of manager, ownership of Government, fundamental of governance
Maximum tree depth	5
Minimum cases in parent node	100
Minimum cases in child node	50
results	
independent variables include	Managerial Ownership (GOV) Ownership percentage of the institutional investors, state-ownership, Board structure, number of responsible governance, number of irresponsible governance,
No. of nodes	
number of terminal	9
nodes depth	5
	3

maximum tree depth is 5 requiring 100 minimum cases in parent node and 50 minimum cases in child node.

Managerial ownership is the first factor affecting firm value. On average, when the managerial ownership is <74%, the interests of the firm will increase by 8 million Rials with the point estimation of 8138352 which is 1.61 times more than the average interests of the studied firms (5.42843). However, when the managerial ownership is higher than 74%, firm's interests will be <3798257 (million rials). Therefore, group A is the group with <74 ownership percentage and group B is the group with >74 ownership percentage.

In group A, when the managerial ownership percentage is <68%, the firm's interests are estimated 2734077 (million rials); however, when the managerial ownership is 68%-74%, the firm's interests are estimated 18541571 million rials. CART model predicts firm's interests based on the managerial ownership percentage in three formats shown on Table 6.

For group B, the tree model is classified into two categories based on the number of non-executive members: when the non-executive members are <2 individuals (one or none) and the managerial ownership is >74%, the firm's interests are estimated 7110436 (million rials); however, this amounts to 2689131 (million rials) for two or more non-executive members on the board.

Based on the model, it seems that the managerial ownership of group B is less coordinated with those shareholders who are only the major shareholders of the firm. Managerial coordination with the firms with one non-executive member on the board could increase firm value by 164%.

Table 6: Output of layer one for model CART

Groups	Relative to average (%)	Firm value (%)	Managerial ownership (%)
A2	54	2734077	<67
A1	368	18541581	67%-74
B	75	3798256	>74

In this successful group which is called B1 by increasing managerial ownership to >87%, the firm's interests are estimated 13360042 (million rials) which is 265% of the average financial interests. When the managerial ownership is 74-87%, the firm's interests of group B1 are 18101138 which is 359% of the average financial interests.

Generally, predicting firm value is affected by two variables of managerial ownership level and the number of non-executive members on the board. Table 7 represents the final output of CART Model. Tree regression model of CART is described in details.

Node 0 includes all firms' data bout CA. The average of CA in these firms is equal to 5042843 rials. The information is gathered from 816 firm-year observations; that is 100% of the studied firms. Therefore, our prediction about CA is 5042843 million rials.

Node 1 includes all CA data among the firms with the managerial ownership <74%. In these firms, the average CA is 8138352 rials. The information is collected from 234 firm-year observations that is 29% of the studied firms. Generally, we predict that CA is 8138352 rials and this is 1.61 times more than the general mean in node 0.

The second node (node 2) includes all CA data for the firms with managerial ownership percentage >74%. In these firms, the average CA is 3798256 rials. The information is collected from 582 firm-year observations which is 71% of the studied firms. Generally, our prediction about CA is 3798256 rials which is 0.69 times more than the general mean in Node 0.

The third node (Node 3) includes all CA data for the firms with the managerial ownership <68%. In these firms, the average CA is 2734077 rials. The information is collected from 154 firm-year observations that is 19% of the studied firms. Generally, we predict that CA is 2734077 rials and this is 0.54 times more than the general mean in node 0.

The fourth node (Node 4) includes all CA data for the firms with the managerial ownership <74%. In these firms, the average CA is 18541581 rials. The information is collected from 80 firm-year observations that is 10% of the studied firms. Generally, we predict that CA is 18541581 rials and this is 3.67 times of general mean in node 0.

The fifth node (Node 5) includes all CA data for the firms with the managerial ownership >74% and with the maximum one non-executive member. In these firms, the average CA is 7119437 rials. The information is collected from 164 firm-year observations that is 18% of the studied firms. Generally, we predict that CA is 7110437 rials and this is 1.41 times of general mean in node 0.

Table 7: Final output of CART Model

	Number of non-executives on the board					
	Total		Maximum one member		More than one member	
	Firm value	Relative to total (%)	Firm value	Relative to total (%)	Firm value	Relative to total (%)
Managerial ownership						
<67	2734077	54	2734077	54	2734077	54
67-74%	18541581	368	18541581	368	18541581	368
74-87%	3798256	75	1810138	36	2689131	53
>87	3798256	75	13360042	265	2689131	53

Table 8: Results of hypotheses testing

Hypotheses	Sig. level	Results	Descriptions
Board size impacts firm value	264/0	Rejected	alpha =5%
The number of non-executive members on the board impacts firm value	015/0	Confirmed	alpha =5%
Institutional ownership impacts firm value	734/0	Rejected	alpha =5%
Board structure impacts firm value	167/0	Rejected	alpha =5%
CEO duality impacts firm value	290/0	Rejected	alpha =5%
State-ownership impacts firm value	305/0	Rejected	alpha =5%
Managerial ownership impacts firm value	049/0	Confirmed	alpha =5%

The sixth node (Node 6) includes all CA data for the firms with the managerial ownership >74% and with the minimum two non-executive members. In these firms, the average CA is 2689132 rials. The information is collected from 436 firm-year observations that is 53% of the studied firms. Generally, we predict that CA is 2689132 and this is 53% of the general mean in node 0.

The seventh node (Node 7) includes all CA data for the firms with the managerial ownership between 74-87 % and with the maximum one non-executive member. In these firms, the average CA is 1810138 rials. The information is collected from 79 firm-year observations that is 10% of the studied firms. Generally, we predict that CA is 1810138 rials and this is 36% of general mean in node 0.

The seventh node (Node 7) includes all CA data for the firms with the managerial ownership between 74-87 % and with the maximum one non-executive member. In these firms, the average CA is 1810138 rials. The information is collected from 79 firm-year observations that is 10% of the studied firms. Generally, we predict that CA is 1810138 rials and this is 36% of general mean obtained in node 0.

The eighth node (Node 8) includes all CA data for the firms with the managerial ownership >87% and with the maximum one non-executive member. In these firms, the average CA is 13360043 rials. The information is collected from 79 firm-year observations that is 10% of the studied firms. Generally, we predict that CA is 13360043 rials and this is 2.65 times of general mean in node 0.

Testing hypotheses: The results of testing hypotheses are summarized in Table 8.

Model selection: As mentioned before, two regression models are used to test the hypotheses. These two models are different in terms of analysis structure and variable selection and implications. So that the linear

multivariate regression is categorized into inferential statistics and tree regression model is classified as a data mining technique. The objective is to select the best model; however, it is not expected that the selected variables by two models are the same.

The accuracy rate of the models determines the priority of them. However, for the discrete variables, some other measures such as sensitivity and diagnosis are also taken into account.

In this study, the accuracy rate is considered for the dependent variable. This is achieved by the errors or residuals. Accordingly, accuracy rate of the regression model is 0.05 and 0.0072 for the linear regression.

Managerial ownership is the first factor affecting firm value. On average, when the managerial ownership is <74%, the interests of the firm will increase by 8 million Rials with the point estimation of 8138352 which is 1.61 times more than the average interests of the studied firms (5.42843). However, when the managerial ownership is >74%, firm's interests will be <3798257 (million rials). Therefore, group A is the group with <74 ownership percentage and group B is the group with >74 ownership percentage.

In group A, when the managerial ownership percentage is <68%, the firm's interests are estimated 2734077 (million rials); however, when the managerial ownership is 68%-74%, the firm's interests are estimated 18541571 million rials.

According to the above mentioned points, it is concluded that firm value is affected by managerial ownership level and the number of non-executive members on the board.

CONCLUSION

The findings reveal that managerial ownership has a significant positive impact on firm value. This is

consistent with the findings of Valipour. In this study, it is concluded that the managerial ownership is positively associated with firm value and economic value added. This is consistent with the findings of Zadeh *et al.* (2012).

The results of the study show that among five corporate governance elements (including ownership percentage of institutional investors, ownership percentage of major shareholders, ownership percentage of controlling shareholders, CEO duality and the number of non-executive members on the board), only ownership percentage of institutional investors has a significant positive impact on economic added value. In other words, the number of non-executive members on the board has a significant impact on firm value. This finding is not consistent with Abbasi and Rastegari Niya. However, this is consistent with the results of Gupta and Fakhari.

The findings about the effect of ownership percentage of institutional shareholders and state-ownership on firm value are not consistent with the findings of Izadi niya and Resayian and Zadeh *et al.* (2012). However, Ahmadi and Abbasi (2011), Diyanati Deylami *et al.* (2013) found the same results. These researchers concluded that there is no significant relationship between CEO duality and firm value. Moloudi confirmed this result but Chung and Son (2008) found different results.

Given the fact that the number of non-executive members on the board will increase firm value, the investors are suggested to select the firms with more non-executive members on the board (maximum one or >1 member or the managerial ownership percentage between 67-74%).

SUGGESTIONS

Tehran Stock Exchange is also suggested to establish instruments to increase the non-executive members of the board or separate the responsibility of CEO and chairman of the board. The following suggestions are presented for future studies:

RECOMMENDATIONS

- The other corporate governance measures can be also used to test their impact on the firm value
- The results of this study should be interpreted with caution because the sample firms are limited (considering the six specific elements mentioned before). In addition, the sample firms do not indicate the whole specifications of the total listed firms on the Tehran Stock Exchange (in terms of size, industry type, ownership structure and productions)

- Future studies can examine the impact of these measures on other factors such as growth opportunity, firm's returns and stock price
- Future studies can compare the situation of privatized firms before and after privatization
- Future research can compare the listed firms on the Tehran Stock Exchange and OTC firms

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