



# Board of Director Characteristics and CEO compensation: Empirical Evidence from Iran

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## Abstract

This study aims to investigate the relationship between Board of Director characteristics and CEO compensation. This is semi-empirical study and statistical sample of research was based on 95 companies listed on the Tehran stock exchange from 2010 to 2014. Variables examined include the ratio of non-executive board members, CEO duality, ownership of institutional shareholders and managerial ownership as independent variables. Factors influencing CEO compensation were considered and the relationship between these variables was studied using multivariate regression. The findings indicate that there is a negative relationship between CEO compensation and managerial ownership. There is also a significant positive relationship between CEO compensation and CEO duality. However, there was no evidence for a significant relationship between ratios of non-executive board members and CEO compensation.

**JEL Classification:** G34

**Keywords:** CEO compensation, ratio of non-executive board members, CEO duality, ownership, institutional investors, managerial ownership.

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## 1. Introduction

During two last decades, CEO compensation has been studied by academics, the public, policy makers and investors in terms of corporate governance mechanisms. Empirical evidence indicates that the compensation of executives during previous years has not only increased considerably but also that this compensation is paid through different methods such as cash, shares and other stock options (Core, 2003). Granting stock or stock options as compensation for executives provides opportunities for competition among managers of the firm for increasing income and preserving cash without extra costs or exiting cash (Denis, 2001). For the compensation of executives, there is a concern that managers could be involved in manipulating internal transactions of companies that increase compensation. Managers are aware of compensation and evaluation of performance by stockholders and regarding this, they may intend to manipulate earnings. The board of directors is a guiding institution which has the control and monitoring role in order to improve the performance of the company and to preserve the interests of stockholders. One motivation for increasing efficiency, improving performance and preserving interests of stockholders is paying compensation to board of directors. In fact, the board of directors is an integral part of the company. Corporate governance is a set of procedures or actions by which companies are run and respond to stockholders, employees and society. The purpose of corporate governance is to ensure that activities of company and policies of management are in line with the interests of stockholders, in particular, and all beneficiaries, generally (Rajabi & Ganji, 2010). Agency theory assumes that there is potential conflict between the interests of stockholders and management and that managers seek to maximize their profit although these interests are in conflict with interests of stockholders (Michal & Rui, 2002).

Agency relationship, as an interaction between one or more stockholders or owners and one or more agents, that agents accept the responsibility for providing some services (Jensen & Meckling, 1976). Generally, management compensation is the main solution for agency problems. Based on this belief, by establishing a suitable model for paying compensation, managers will act on behalf of stockholders and creditors. The main reason for compensation is that managers should be compensated for their organizational responsibilities and develop the required motivation to carry them out in the stockholders' interests. Therefore, this research tries to find empirical evidence to answer the questions: "is there any significant relationship between corporate governance mechanisms and the compensation of managers in firms listed on the Tehran stock exchange? What is this relationship?".

## 2. Literature review and hypotheses development

Corporate governance is subject of many discussions in the business world and financial markets during last ten years such that development of corporate governance mechanism as a priority for developing suitable leadership procedures is considered by financial and economic policy makers. The basic problem in this monitoring mechanism occurs when stockholders oppose the activities of managers. What is now considered to be "hidden" activities of companies in scientific and professional circles, is an exploration of control mechanism of firms which is presented in corporate governance literature (Zamani, 2010). There are different definitions of corporate governance, including limited and focused definitions of companies and stockholders to comprehensive definitions and responding to stockholders, individuals or beneficiaries. One comprehensive definition is:

“corporate governance is a set of systems, processes and structures which seeks to ensure equity, accountability, transparency and justice in business by using internal mechanisms like board of directors, internal administrative control and auditing, internal auditing, risk management and external mechanisms like regulatory monitoring, legal systems, capital market, monitoring of major stockholders, independent auditing and ranking institutions” (Rahmani, 2010). Generally, corporate governance is a multidisciplinary concept and aims to achieve four principles in the firms:

1- Accountability 2-Transparency 3-Justice (fairness) 4-Observing rights of equity holders. The Board of directors is an important corporate governance mechanism and plays important role in improving quality of financial reporting and reducing fraud. Based on the general definition, corporate governance is a system by which companies are guided and controlled. Here, position of board of directors as a guiding body which has monitoring role for executives, is more important.

Managers, by considering their personal interests, focus and invest in projects which have short term interests and pay no attention to the long term interests of stockholders (especially, in cases where salaries, benefits and compensation of managers are related to financial profit). In large companies controlled directly by managers and indirectly by institutional investors, managers are constrained to an interest in short term earnings. Under these conditions, managers are motivated to gain other earnings which reduces the value of stockholders' interests (Hasas Yeganeh, 2005). In other words, by increasing conflict between managers and stockholders of joint stock companies, those managers who seek the growth of the company at the expense of stockholders' interests, tend to make unprofitable (short term focused) investments in order to increase their salaries. This will lead to agency costs and finally, reduces the wealth of stockholders.

In order to compensate the creativity and initiatives of management in finding and applying procedures and new work methods, organizations often give rewards to management. Compensation is often paid for doing responsibilities at a higher level than common standards. In sum, we can say that managers are aware of their compensation and performance appraisal by stockholders and, for this purpose, they manipulate earnings to achieve compensation. If CEO compensation was lower than a given (desired) level, management transfers part of future years' earnings to the current period and, in some cases, management transfers current year earnings to future years. Fama (2010) discusses compensation and the role of accounting selections in CEO compensation. Managers, in addition to their salaries, enjoy continuously extra compensation based on their performance. Data from financial statements, especially net profit, are used to measure the performance of managers. Therefore, managers have motivation for selecting accounting methods and authorizing accounting estimates and methods that improve their compensation. Researchers have interpreted this issue as managers, providing that their compensation is determined based on the profit, have motivation for selecting accounting methods that increase earnings. Fama (2010) concluded that managers, in the case of determining bottom or ceiling in compensation plans, select accruals that reduce earning and when there is no bottom or ceiling, they select accruals that increase earnings. When stockholders of a company delegate decision making to management, managers have motivations for activities that maximize their interests, even if these activities were not in line with the

interests of stockholders. Earning management occurs when managers change financial reporting and the structure of transactions in order to misguide some beneficiaries (stockholders, creditors, employees, investors) about the performance of the firm, or even influence the results of contracts which are dependent on the accounting figures. In fact, earning management is a deliberate act in order to pretend that the earnings of the company has naturally reached the (manager's) desired level. Among motivations for this act, we can refer to the influence of earning management on stock price, increases in salary and management advantages and prevention of violating loan contracts. Most of these motivations are related to the future interests like compensation.

### ***2.1. Corporate governance in Iran***

Corporate governance in Iran is not yet well developed, but in the last few decades the government has taken some steps to make marginal improvements. The Tehran Stock Exchange (TSE) was established in early 1967. The process of instituting and controlling firms is briefly addressed in the Iranian Trade Law, particularly in its April 1968 amendment. A modern concept of corporate governance was not recognized in Iran, however, until the government sought to improve the competitive position of Iranian companies in the world's capital markets in an attempt to attract foreign investment. In early 2000, the management of the TSE, the Islamic Parliament Research Center and the Economic and Finance Ministry, began efforts to improve at least on paper, corporate governance in Iran. Until recently, the Iranian government controlled the majority of businesses in Iran, either directly or indirectly, and has made significant efforts to expand the capital market. Its actions indicate an interest in enhancing the current system to include external governance structures. For instance, the Third and the Fourth Economic Development Plans place a great deal of importance on the privatization of governmental organizations. Recent policies have also been aimed at increasing the number of external control mechanisms in place. Currently, Iranian firms still have weak internal and external corporate governance when compared to companies in industrialized nations. The capital market in Iran is new and somewhat inefficient. Pension funds, mutual funds, and insurance companies now own more than half of the share value of publicly traded stocks on the TSE. Major shareholders, including institutional investors, exercise their supervision by controlling management decisions and by appointing executives according to their whims and fancies. Unlike that of majority shareholders, minority shareholders' interests are not protected in contrast to other countries where non-controlling shareholders sometimes exercise significant influence. No Iranian institution ranks firms based on such characteristics as revenue, income, total assets, number of employees, etc. Iran's internal control supervision mechanisms are also inadequate. In general, organizational roles and responsibilities are poorly defined and communicated. As a result, employees too often place personal gain and interest ahead of corporate interest. Nevertheless, and despite the noted inefficiencies, public companies registered on the TSE are required to have their financial statements reviewed by an external auditor. In late 2004, the TSE Research and Development Center published the first edition of The Iranian Code of Corporate Governance. This code consisted of 22 clauses, which included the following: definitions of key terminology, an overview of the management board and shareholders' responsibilities, guidelines for financial disclosures, and a conceptual framework for accountability and auditing. The code was amended in 2005 to address issues of ownership structure, the capital market situation and the Trade Law. This second edition of The Iranian Code of Corporate Governance contains five chapters and 38 clauses. While the application of this code is not mandatory, many firms have implemented it.

## 2.2. Hypotheses Development

### 2.2.1- Board independence and CEO compensation

Agency scholars (Byard, Y. Li, J. Weintrop. (2006) suggest that appointing outside directors on the board is an important aspect that enhances the board's independency and, as a result, increases its directors' ability and willingness to monitor management's investing and financing decisions. Generally, empirical studies provide support for the hypothesis that the percentage of outsiders on the board has a positive effect on firm performance. board with a high proportion of insiders is regarded to be a weak governance mechanism. Others report that boards with a low proportion of outside directors pay their CEOs higher compensation. Both Coakley and Iliopoulou (2006) and Talmor and Wallace (2000) argue that board strength and effectiveness act as a substitute to incentive compensation. Arguably, stronger boards are related to lower CEO compensation. On the contrary, Core et al. (1999) report that the high proportion of insiders on boards are negatively associated with CEO compensation. Similarly, Hermalin and Weisbach (1991) report that outside directors are less effective in monitoring CEO compensation. Ozkan (2007, 2011) reports that the proportion of non-executive directors on a board has a positive relationship with CEO compensation, which suggests that non-executive directors are not an effective monitoring mechanism for determining CEO compensation. Based on the foregoing discussion it can be inferred that the proportion of outside directors might have an inverse impact on CEO compensation, thus we posit the following hypothesis (in alternate) form:

**H<sub>1</sub>: Proportion of non-executive/independent directors will be a negative effect on CEOs' compensation.**

### 2.2.2- CEO Duality and CEO compensation

Fama and Jensen (1983) point out that CEO duality signals the absence of separation of decision control and decision management. The result of CEO duality is the concentration of decision-making power, which could constrain board independence and reduce its ability to execute its oversight and governance roles (Finkelstein and D'Aveni, 1994). CEOs on boards mean that they have greater power and are more influential and therefore are able to increase their compensation packages. This is more of a case when the CEO is also the chairperson, or when the CEO is a member of the compensation/remuneration committee. Core et al. (1999) and Reddy et.al (2015) report that CEO compensation is much higher when the CEO is also the chairperson of the board. Based on the above, we propose our second hypotheses as follows:

**H<sub>2</sub>: CEOs on boards will have a positive effect on CEOs' compensation.**

### 2.2.3- Managerial ownership and CEO compensation

One important form of insider ownership in the firms is managerial ownership. Managerial ownership can increase management's motivation to work to raise the value of the firm's stock (Hermalin & Weissbach 1991). Yermack (1996) reports that board stock ownership and firm value are positively associated. Therefore, it is assumed that by providing managerial ownership incentives may align management's interest closely with that of the shareholders, thus encouraging them to consume fewer perquisites and provide vigilance so that large shareholders

do not expropriate outside small shareholders' interests. Based on the prior literature, we propose our fourth hypothesis as follows:

**H<sub>3</sub>: Managerial ownership will be negatively associated with CEOs' compensation levels.**

### ***3.1. Background research***

Steven et.al (2005) studied the relationship between characteristics of board of directors and compensation of executives in private sector. Research sample includes 80 companies listed in Tehran stock exchange in New Zealand. Results of research show that there is significant relationship between all variables with compensation of board, except non-executive members' variable.

Ozkan (2007) in a research titled "corporate governance and CEO compensation in UK companies" studied the performance of companies and effect of corporate governance mechanisms and ownership structure and structure of board in determining amount of compensation for managing director. Research sample included 414 large UK companies during 2003-2004. Results of research show that firms with larger size and higher ratio of non-executive members have higher compensation.

Dong and Ozkan (2008) studied determinants in compensation paid to managers by emphasis on the modifying effect of institutional ownership. Research sample included 563 non-financial companies during 2000-2004. Results showed that ownership of institutional investors enhances the relationship between performance and compensation of managers.

Canyon and He (2011) studied the relationship between executives' compensation and corporate governance mechanisms in Chinese companies. In this research, log of compensation was used as dependent variable and institutional ownership, non-executive managers, size of board and dichotomy of managing director as independent variables of research and measures of corporate governance. Findings showed that company with non-executive managers and higher institutional ownership, pay lower compensation to managers.

Erkens et.al (2012) studied the effect of corporate governance on the financial performances of companies during crisis 200-2008. This study has used data of 296 financial companies from 30 countries in the center of crisis. They used variables independence of board, institutional ownership and major stockholders as criteria for measuring corporate governance. Findings of research indicated that firms with more independent board and higher institutional ownership during crisis experience lower return and higher loss. Reddy et.al (2015) in a research titled "effect of corporate governance on the executives' managers in firms listed in New Zealand stock exchange" by using sample consisted of 490 firm-year observation during 2005 to 2010, studied the relationship between these variables in capital market of New Zealand. They used variables non-executive members, CEO duality, managerial ownership and institutional investors' ownership as corporate governance measures. By using multivariate regression models, results of hypothesis testing indicates that compensation of managers has negative significant relationship with ratio of non-executive managers, ownership of institutional investors and managerial

ownership and positive significant relationship with dichotomy of managing director' responsibility.

Javan Balenga (2012) studied the effect of ownership structure on the relationship of executive' compensation and performance. Findings of this research indicated that ownership focus has positive and significant effect of the relationship between compensation of board members and performance of firms. While in corporate ownership, the focus has positive and significant effect on the relationship between compensation of board and return of stocks, but there is no relationship in managerial ownership.

Ebrati (2013) studies the relationship between corporate governance index and performance and whether competition of product market can be an alternative governance mechanisms or supplementary of corporate governance. In order to test hypothesis, a sample consisted of 178 firms listed in Tehran stock exchange during 2008-2011. Research variables included corporate governance which is determined based on the ranking of firms based on the governing factors. Hierfeindal-Hirschman index is used for market competition and performance criteria Q-Tobin, assets return and efficiency. Results of research showed that product market competition can supplement corporate governance and improves the performance by corporate governance.

### **3. Research Methodology**

This research is applied in terms of purpose and post event semi-empirical in terms of data acquisition in accounting research which has been conducted by using multivariate regression and econometrics models. Statistical sample of this research includes all firms listed in Tehran stock exchange during 2010-2014. Selected sample includes firms with following characteristics:

1. Firms listed in stock exchange organization before 2010 and are in this list until end of 2014.
2. In order to increase comparability, fiscal year is March.
3. They have not changed their activity or fiscal year.
4. They should not be investment or broker companies.
5. Lag in the transactions of these firms should not exceed 6 months.

After above limitations, 95 firms were selected as statistical sample in this research. Data were extracted from statistical archive CDs of Tehran stock exchange, database of Tehran stock exchange and other related databases and software Tadbirpardaz and Dena. Final analysis of data was done with Eviews.

#### **1.3. Variables and used models**

Study variables in this research include dependent variable, independent variables and control variables.

##### ***1.1.3. dependent variable***

Dependent variable in this research is executives' compensation which is calculated through compensation of board to loss or gain of company.

##### ***2.1.3. independent variables***

- Ratio of non-executive board members

It is calculated by dividing number of non-executive members of board on total number of board. By non-executive members, we mean a member who has not executive position in firm.

- CEO duality

This is a virtual variable that its value is 1 if managing director is president and vice-president of board; otherwise, it is 0.

- Managerial ownership

Managerial ownership is sum of shares possessed by members of board.

### 3.1.3. control variables

In this research, some of important variables which are known as effective factors based on the effective factors on executive' compensation, were considered as control variables, including:

- **Firm size:**

In this research, similar to Alves et.al (2012), natural log of firms' annual sale was used for measuring size of firm.

- **Firms value:**

According to Reddi et.al (2015) and Conyonet,al (2011) research, Q-Tobin was used in this study in order to measure the value of company that this ratio is calculated by dividing market value to asset substitution value. Value larger than 1 indicate optimal use of assets. Because it is difficult to estimate the market value of debt and asset replacement, simplified model was used for calculating Q-Tobin:

$$Q_{i,t} = (BVA_{i,t} + MVE_{i,t} - BVE_{i,t}) / BVA_{i,t}$$

In which

$Q_{i,t}$  is Q-Tobin for firm i in year t,  $BVA_{i,t}$  is book value of assets for firm i in year t,  $MVE_{i,t}$  is market value of equity holders firm i in year t and  $BVE_{i,t}$  is book value of equity holders of firm i in year t.

In order to test hypotheses, we used model of Reddi et.al (2015) as following:

$$COMP_{i,t} = \beta_0 + \beta_1 IND_{i,t} + \beta_2 DUAL_{i,t} + \beta_3 MAN_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 Q_{i,t} + \varepsilon_{i,t}$$

$COMP_{i,t}$ : ratio of executives' compensation to loss and gain of firm i in year t;

$IND_{i,t}$ : ratio of non-executive board members of firm i in year t;

$DUAL_{i,t}$ : CEO duality of firm i in year t;

$MAN_{i,t}$ : managerial ownership in firm i in year t;

$SIZE_{i,t}$ : size of firm equals with log of sale for firm i in year t;

$Q_{i,t}$ : calculated value of firm based on the Q-Tobin for firm i in year t;

$\varepsilon_{i,t}$ : regression model error;

in order to estimate research model, we used pooled data method. Pooled data is obtained by combining time-series and cross-sectional data which is now widely used by researchers. In most cases, researchers use this method for cases where problems cannot be studied as time-series or cross-sectional or when data is low. Merging time-series and cross-sectional data and necessity of using it is due to increase in number of observations, higher degree of freedom, low heteroscedasticity and reducing colinearity between variables.

## 5. Empirical results

### 5.1. Descriptive statistics

In order to study general characteristics of variables and estimating the model and careful analysis, familiarity of descriptive data is necessary. Table (1) is descriptive data of variables which includes central tendency and dispersion indices for a sample consisted of 95 firms-year



observations during 2010-2014. Comparison of observations' mean with median and their slight differences shows the normality of data distribution.

**Table (1): descriptive data for research variables**

Variable	Observations	Mean	Median	Min	Max	SD
<i>COMP</i>	95	0.014	0.011	0.000	0.062	0.103
<i>IND</i>	95	0.661	0.637	0.2	0.714	0.351
<i>DUAL</i>	95	0.168	0	0	1	0.283
<i>MAN</i>	95	0.098	0.086	0.001	0.439	0.608
<i>SIZE</i>	95	11.503	11.108	10.647	12.703	0.732
<i>Q</i>	95	1.623	1.409	0.864	5.309	1.237

COMP: ratio of board compensation to loss and gain, IND: ratio of non-executive members; DUAL: CEO duality; MAN: managerial ownership of company; SIZE: size of company; Q: value of firm based on Q-Tobin.

As this table shows, non-executive managers form %66 of board of directors in this study. In addition, ownership of institutional investors in sample companies fluctuates from 0 to 96% and its mean for these companies is %58 which indicates active participation of these investors in stock exchange. Size of company which is calculated by log of annual sale has mean 11.503 and median 11.108 that it's minimum and maximum is 10.647 and 12.703.

**5.2. Multivariate hypothesis test**

Regarding pooled data modelling, we first should specify which assumption should be imposed by assuming the same or different intercepts for different cross-section. Therefore, we have used Limer F-test. In this test,  $H_0$  hypothesis indicates same intercept and hypothesis  $H_1$  indicates inhomogeneity of intercepts. If F-statistics was larger than critical F-value, null hypothesis is rejected and different intercepts are accepted for cross-sections. Results show that null hypothesis is rejected in different cross-sections. After specifying that intercept is not same for different cross-sections, we should determine used method for estimating model which is Hussmann test. In this test, hypothesis  $H_0$  indicates consistency of estimating random effect against  $H_1$ , indicates inconsistency of random effect estimations. Therefore, if  $H_0$  is accepted, random effect method is preferred to constant effects; otherwise, constant effects will be preferred to random effects' model. Results of table (2) indicate that null hypothesis is accepted; therefore, model should be estimated by random effects' method.

**Table (2): results of tests for estimating research model**

Test	Statistic value	Degree of freedom	Sig.	Result
F-Limer test	6.083	(374,94)	0.000	$H_0$ rejected
Hussmann test	10.535	6	0.092	$H_0$ accepted

In this research, for correlation test between residuals, Durbin-Watson statistics and for heteroskedasticity, generalized least squares (GLS) will be used. In addition, in order to measure collinearity test was studied using variance inflation factor and tolerance. Generally, this problem occurs when variance inflation factor for exploratory variables is more than 10 or its tolerance is near 0. By looking F-statistics (9.621) in this table and comparing it F table, we can see that

fitted regression model is significant in %5 level error. Adjusted determination coefficient indicates that independent variables explain about %56 of executive' compensation changes. Durbin-Watson statistics (2.081) indicates lack of auto-correlation between components of regression model. The reason for this is that Durbin-Watson statistics intends to 2. Regarding significance and suitability of fitted regression model, we can analyze research hypotheses as following:

**Table (3): results of research hypotheses**

Variables	Coefficients	Standard error	t-statistics	Sig.	Collineraity statistics	
					VIF	Tolerance
<i>C</i>	0.385	0.170	2.257	0.0247	-	-
<i>IND</i>	-0.004	0.010	-0.404	0.6859	1.208	0.827
<i>DUAL</i>	0.054	0.018	2.891	0.0041	1.192	0.837
<i>MAN</i>	-0.006	0.002	-2.567	0.0107	1.203	0.831
<i>SIZE</i>	0.025	0.008	3.005	0.0011	1.148	0.831
<i>Q</i>	0.041	0.020	2.003	0.0460	1.172	0.853
<b>F statistics</b>	9.621			F significance		0.000
<b>Adjusted R<sup>2</sup></b>	0.559			Durbin-Watson statistics		2.081
<b>Model estimation method</b>			Constant effects			

The First hypothesis indicates that there is significant relationship between non-executive board members and executives' compensation in firms. As above table shows estimated coefficient and t-statistics related to non-executive board members (*IND*) is negative but it is not statistically significant. Based on this,  $H_0$  hypothesis is accepted and first research hypothesis is rejected in %5 level error.

The second hypothesis indicates that there is significant relationship between CEO duality and executives' compensation. As table (3) shows, estimated coefficient and t-statistics related to *DUAL* is positive and significant in %5 error level. Therefore,  $H_0$  hypothesis is rejected and the second hypothesis is confirmed in %5 error level.

The fourth hypothesis states that there is a significant relationship between managerial ownership and executives' compensation. As table shows, estimated coefficient and t-statistics related to managerial ownership is negative and significant in %5 error level. Therefore,  $H_0$  is rejected and fourth hypothesis is confirmed in %95 confidence level. Among control variables of model, only firm size variables and leverage have significant relationship with value of company.

## 6. Conclusion

The purpose of this research was studying the relationship between corporate governance and executives' compensation. In order to achieve this, a sample consisted of 95 firms listed in Tehran stock exchange during 2010-2014 is considered.

In first hypothesis, the relationship between non-executive members' ratio and CEOs' compensation was tested. Result of hypothesis testing indicates lack of significant relationship between non-executive members and CEOs' compensation. This is while based on the theoretical basics and agency theory, it is expected that presence of non-executive managers in boards and monitoring performance as independent individuals reduces compensation of managers due to information asymmetry between managers and owners and agency issues.

The results of second hypothesis indicated that there is positive significant relationship between CEO duality and executives' compensation. This means that in firms that duties of head of board of directors is not separated from managing director, due to disturbance in monitoring role and independence of board, the motivation for personal interest and compensation increases. This result is consistent with findings of Reddi et.al (2015).

In the fourth hypothesis, we studied the relationship between managerial ownership and CEOs' compensation. Result of hypothesis testing indicates that there is negative and significant relationship between managerial ownership and executives' compensation. This finding is consistent with results of Reddi et.al (2015) research. It is suggested to investors and activists of capital market that during investment decision-making, they consider structure of board as an effective factor on executives' compensation in their decision making models.

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