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## Article

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## **Role of Board and Firm Performance in Determination of CEO Compensation: Evidence from Islamic Republic of Pakistan**

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### **Abstract**

The current research aims to investigate the influence of board effectiveness and firm performance on CEO compensation within the context of developing economy of Islamic Republic of Pakistan. The study uses Partial Least Square (PLS) based Structural Equation Modeling (SEM) Technique to draw the inference using PLS Graph Version 3.0. It uses Karachi Stock Exchange (KSE)-100 index companies as a sample for the period of five years 2007-2011. Before analyzing the structural model the validity and reliability of the model is confirmed through bootstrapping technique and variance inflationary factor respectively. The structural model results reveal that board effectiveness has negative influence on CEO compensation. Opposite to agency theory and current studies from developed countries, we have found a negative association between the firm performance (firm value and firm profitability) and CEO compensation. These results are due to different business environment of Pakistan and poor corporate governance structure. So, it is concluded that board of directors of Pakistani companies are not that much effective to facilitate the objective determination of CEO compensation and failed to design such contracts which can link the CEO pay with firm performance. Our results also support the international literature that firm size is the major determinant of CEO compensation. Most of the previous studies have been conducted with reference to developed economies so we need to know the procedure through which the corporate managers in developing economies are compensated. The unique characteristics of Pakistani business environment like concentrated ownership, family owned businesses and poor governance structure make it interesting to study this issue. Moreover, unlike developed economies the CEO compensation does not include stock options as a part of the total compensation representing the difference in CEO compensation contracts with respect to developed economies and developing economies. So, current study makes a valuable addition to the

available literature by investigating the issue within the context of unique business environment of Pakistan.

### **1. Introduction**

Agency theory states the existence of conflict of interest between the shareholders of publicly listed company and company's Chief Executive Officer (CEO). The board of directors can resolve this conflict of interest by designing such contract for the company's CEO, which ties his pay with company's performance, thereby giving the CEO an incentive for maximizing the shareholders' wealth. Thus, the CEO pay-performance relationship is the core of the agency theory (Baker, 1992; Kaplan, 1994). It implies that, CEO pay-performance relationship can serve as a tool to examine how firm is successfully dealing with the deviation of interest between the CEO and shareholders. Extensive research work is available on CEO compensation. The earliest study on CEO compensation was conducted by Jensen and Meckling (1976). Agency theory emphasises that managers prefer to protect their self-interests during the performance of their duties in a company. The managers having lower equity ownership in a company are less motivated for maximizing the shareholders' wealth and they want to maximize their personal incentives through increase in their perquisites. However, the purpose of formal mechanism (monitoring and reward structure) is to resolve the issue of non-convergence of interests of the management and shareholders so that the goal of maximization of shareholders' wealth can be achieved.

The major corporate governance mechanism is operated through the board of directors of a company who are responsible to monitor the actions of the top managers as well as the determination of CEO compensation (Ezzamel and Watson, 1998). Typically, executive directors and the CEO are the members of the board of directors of a particular company. The board of directors has to implement the procedures to protect the shareholders from the self-serving behaviour of the top management. So, the appointment of independent non-executive directors to the board is one of the procedures to protect the shareholders' interests. Non-executive/outside directors are supposed to deter the unwarranted top management pay and also promote the performance based compensation (Hampel, 1998; Greenbury, 1995 and Cade bury, 1992). Outside directors have motivation to take their responsibility seriously because this will affect their reputation (Fama and Jensen, 1983) and it is also their fiduciary duty towards the shareholders of a company. Many research studies on the subject of CEO compensation have used the portion of non-executive directors as a proxy for effective board monitoring (Conyon and Peck, 1998). Effective monitoring by the non-executive directors also plays very crucial role within the context of Pakistani companies because of substantial voting power held by the executive directors. As a reflection of this concern, the Pakistan Code of Corporate Governance (2002) does not allow more than 75% executive directors on the board of a company.

According to Jensen and Meckling (1976) the equity ownership by the members of the board of directors leads the firm towards the improved corporate performance as increase in the wealth of managers is associated with the improved performance of the company. It ensures the strong motivation of the directors to effectively monitor the actions of the top managers. However, when board equity ownership exceeds a certain level, the directors may negotiate with executives regarding their own interest and this can lead to such decisions which may not generate the value for the company, like merger or acquisition (Jensen and Ruback, 1983). Likewise, Finkelstein and Hambrick (1989) and Mehran (1995) report that managerial ownership is positively link with CEO pay. On the flipside,

Knop Mertens, (2010) report a negative relationship between board shareholding and CEO compensation.

The current study aims to examine the role of the board of directors in determining the CEO compensation through effective monitoring within the context of developing economy of Islamic Republic of Pakistan. The study is motivated by following factors. First, mostly studies on this subject are with reference to developed economies like USA, UK, and Canada and European countries. But many economists strongly suggest that the literature based on the developed economies may not have implications for the developing economies because of basic structural and institutional differences in the markets and organization of developed and developing countries (Ghosh, 2006). In addition, we still do not know how the managers of emerging markets are compensated and promoted as well as we do not know which factors affect these decisions (Fan et al., 2011). Second, the Pakistani firms' ownership structure makes it interesting to investigate the subject of CEO compensation. Like many other South Asian countries the ownership structure in Pakistan is substantially differs from the developed countries, which have been investigated by the previous researchers. World Bank (2005) reports that family ownership as well as concentrated ownership is common in Pakistan. Many listed firms in Pakistan are owned by an individual and his/her family. Thus representing a phenomenon which has implications for corporate governance, firm performance and determination of top management pay i.e. CEO pay (Lawton and Tyler, 2001 and Mishra et al., 2001). The management style in the family owned firms is often autocratic, leading towards the concerns that some controlling shareholders might treat the company as their personal estate for doing anything which can please them (Bond, 1996 and Brewer, 1997). So under these circumstances the role of outside director or independent non-executive directors becomes very crucial to curtail the self-serving behaviour of the top management (HKSA, 2001). Therefore, Pakistani business environment provides us a unique opportunity to investigate the role of effective monitoring by the members of the board of directors in determining the CEO compensation.

Effective monitoring by board members can reduce the need for incentive alignment. This study uses six proxies for effective monitoring, which are:

- 1) Board Size
- 2) Proportion of Non-Executive Directors on the Board
- 3) CEO Role Duality
- 4) Independence of the Chairman of the Board
- 5) CEO Shareholding
- 6) Board Shareholding

We attempt to find out the CEO pay-performance relationship within the context of Pakistani business environment and examine the role of board of directors in determining the CEO compensation also. Among the six board effectiveness measures, one measure, selection of the chairman of the board from the non-executive directors (independence of the chairman of the board) is less researched measure till date. To best of our knowledge, there is just single study which has analysed the impact of chairman's independence status on the earnings management (Habbash, 2010). So this is a novel study which

includes the chairman's independence status as a board effectiveness proxy while studying the subject of CEO compensation.

The next section comprehensively reviews the existing literature and develops the hypotheses based on the literature. Third section provides the research design including the information about sample, variables and statistical techniques. Fourth section includes the evaluation of measurement as well as structural model to test the hypotheses. Last section concludes the findings of the research.

## **2. Literature Review**

The subject of CEO compensation has been an issue of great importance and ongoing debate in corporate finance literature. In this section, the study develops the expected relationship between the board monitoring effectiveness, firm performance and CEO compensation.

The board of directors act as the agent of the shareholders and its main responsibility is to work for the shareholders interest. The core of internal governance mechanism is the board of directors which can monitor the actions of the top management i.e. top management compensation (Ezzamel and Watson, 1998). Larger board represents the quality of internal governance mechanism through better monitoring of the actions of top managers because they have more time and experience as compared to smaller board (see Lipton and Lorsch, 1992; Jensen, 1993). Whereas, Yermack (1996) and Ozkan (2007) argued that smaller boards are more effective as compared to larger boards because they enjoy better communication and interaction. Contrary to the earlier argument several empirical studies have found that board size is an increasing function of CEO pay. Like Fahlenbrach (2009) analysed the impact of board quality on the CEO compensation. Board size was taken as a measure of the board's quality and it was reported that it had a positive relationship with the CEO total compensation. The study also found that board size has negative impact on the CEO pay-performance relationship. It means larger boards are less effective in monitoring CEO compensation than smaller board. Similarly Ozkan (2007) found that board size has direct impact on cash compensation as well as on total compensation. She further reported that board size reduces pay-performance relationship. Basu et al. (2007) argued that larger board reduces corporate governance quality because of inefficient monitoring and reported that larger board pays more to their CEOs. However, study results provide little support for Japanese board in its role in determining cash compensation of the CEO.

CEO duality means the CEO of the company is also the chairman of the board of directors. CEO role duality indicates that CEO is powerful in decision making and controlling the company's business (Fama and Jensen 1983 and Boyed, 1994). When the roles are separated, an independent chairperson is able to facilitate an objective appraisal of top managers' performance (Boyed, 1994) so that the CEO compensation can be determined accordingly. Aligning with the agency theory several empirical studies have found positive impact of CEO role duality on CEO compensation. Fahlenbrach (2009) forecasted that CEO duality has adverse effect on the internal governance which leads towards the poor quality of board monitoring in determining the CEO compensation. Correspondingly Brick et al. (2006) and Wang et al. (2011) reported that CEOs with dual responsibility enjoy more power and take advantage of it by receiving more compensation.

Another most studied measure of board effectiveness is proportion of non-executive directors or outside directors on the board. Those directors can critically review the actions of CEO because they do not have any hierarchical authority relationship within the organization and do not get afraid of retaliation (Daily and Schwenk, 1996). The executive directors may be conciliatory towards the CEO while the outside directors are less appealing for the CEO (Beatty and Zajac, 1994). These outside directors also have directorship on the other different boards, which reveals that they have vast experience, expertise in monitoring and supervision of the top management (Fama and Jensen, 1983). The results of (Hermalin and Weisbach, 1988) support the arguments of (Fama and Jensen, 1983). Contrary to the above argument, the outside directors may weaken the internal governance if they do not have any interest in the company's stock (Finkelstein and Hambrick, 1996). Correspondingly the top management may have hidden relationship with outside directors and that could result in poor internal governance (Core et al., 1999). While some recent empirical studies have reported that proportion of outside directors is decreasing function of CEO pay. Like the studies conducted by Byred and Cooperman (2010), Sapp (2008), and Basu et al. (2007) shed the light on how non-executive directors could effectively play their role in monitoring the top management pay.

Generally, previous studies on the subject of corporate governance and top management compensation have relied on CEO role duality, proportion of non-executive directors and board size as a notion of board effectiveness. This study uses one more proxy, independence of the chairman of the board, for studying the effectiveness of the board. Only one study was found which had empirically investigated the impact of chairman's independence on the earnings management (Habbash et al., 2010). The issue of chairman's status of independence is pointed out by the UK Corporate Governance Code (2003), whereas Code of Corporate Governance of Pakistan (2012) also emphasized the importance of independent status of chairman. The independent chairman may be in a better position for fair appraisal of the top management compensation because he has no fear of retaliation. The independent chairman can better resolve the issue of non-convergence of interest between principal and agents. If the company has good number of outside directors then the probability of having independent chairman is high. When an independent chairman and appropriate proportion of non-executive directors exist then the CEO of the company will have very few chances to manipulate his/her compensation package. Under these circumstances, CEO performance appraisal will be objective and fair; therefore CEO compensation will be determined in accordance with his performance. That's why this study included this important variable as a proxy for board's effectiveness while studying the CEO compensation.

The studies on the subject of corporate governance and CEO compensation have included CEO and board equity ownership as one of the most important determinant of CEO compensation. The firm in which the top management has lower equity ownership faces more agency problems (Jensen and Meckling, 1976). Thus the top management equity ownership can serve as a tool to align interest of agents with the owners (Ozkan, 2007). CEOs having higher equity ownership behave like owners and act in favour of the company. Those CEOs perform better for maximizing their wealth by improving the company performance and not through manipulating their compensation package (Talmor and Wallace 2001). Allen (1981) and Talmor & Wallace (2001) empirically found that CEO equity ownership had adverse effect on the CEO compensation. According to Jensen

and Meckling (1976) the significant equity ownership by board of directors can also resolve the issue of non-convergence of interest between the owners and agents, and can result in form of improved performance through effective monitoring and supervision. While high equity ownership by the directors bring different kind of agency issues like majority shareholders can attempt to expropriate the assets away from the minority shareholders. One way to do this is paying extremely high and unjustified compensation to the manager-owners. But, when the directors have very low equity ownership then shareholders are more concerned about the shrinking of duties of the directors. This problem does not prevail if directors have high equity ownership. Several empirical studies have documented that board equity ownership is decreasing function of CEO compensation (Cheng and Firth, 2005; Knop and Mertens, 2010). So aligning with the previous literature and agency theory, it is reasonable to expect negative impact of board effectiveness on the CEO total compensation. Hence, our first formal hypothesis of the study was:

- **H<sub>1</sub>:** Board effectiveness has negative impact on the CEO compensation.

According to agency theory, CEO pay-performance relationship is a tool to resolve the agency problems. Core et al. (1999) suggested that CEO's pay should be an increasing function of firm's performance. Several empirical studies have investigated this relationship and documented inconsistent results. Like several studies have reported CEO compensation is an increasing function of firm's performance (Farmer et al., 2013; Scholtz and Smit, 2012; Lee and Chen, 2011). On the other hand, some studies have documented no relationship (Gigliotti, 2013; Zhou et al., 2011 and Jeppson et al., 2009). So, aligning with the agency theory and recent findings the second hypothesis of the study was:

- **H<sub>2</sub>:** CEO compensation is an increasing function of firm performance.
- **H<sub>2a</sub>:** CEO compensation is an increasing function of firm value.
- **H<sub>2b</sub>:** CEO compensation is an increasing function of firm profitability.

### 3. Research Design

#### 3.1 Sample Selection

Karachi Stock Exchange (KSE) is the oldest as well as biggest stock exchange of Pakistan. More than 550 firms are listed on KSE. It provides the various indexes such as KSE-100 index, KSE-30 index and KMI-30 index. KSE-100 index aims to provide a bench mark to compare the performance of different stock prices over a period of time. More specifically, it provides the information about how Pakistani stock market is performing. It consists of 100 companies which are selected on the basis of sector representation and highest free-float capitalization. It represents that 80% of overall trading at KSE is recorded within the KSE-100 index companies. It includes at least one company from each sector (excluding open-end mutual fund sector). The current study used the KSE-100 index as sample because it includes 100 companies representing each sector of Pakistan and the 80% of overall trading is recorded within these 100 companies, so the study is generalizable as well as useful.

#### 3.1.1 Data Source

The study used data from the annual reports of all KSE-100 index companies because there is no database which may provide the firm level data for Pakistani companies, particularly focusing on the board characteristics. The study period consisted of five years ranging from 2007 – 2011. The annual reports of the companies were collected from the several sources

such as, companies' official websites, companies head offices and from the KSE. The annual reports of the companies provide the valid data (Neu et al., 1998) because these reports are prepared by the accounting professionals in accordance with the International Accounting Standards, Companies Ordinance, 1984, Code of Corporate Governance and several other stock exchange requirements. Further these reports are also audited by the independent external auditor. So there is no problem of validity of the data used in the current study.

During the study period, it was found that some companies were not listed or delisted, so, those were excluded from the final sample. Further, those firm years were not included in the final sample in which the companies had not reported the required information. Hence, final useful sample consisted of 406 observations.

### *3.1.2 Explanation of variables*

#### *3.1.2.1 CEO compensation*

Basic pay perks and cash bonuses were added to obtain the total compensation of CEO. During the data extraction from the annual reports we found that CEO total compensation included only cash compensation. Stock options were not commonly used in the management compensation packages. While the international literature suggests that stock as a part of the compensation can resolve the agency issues because compensation packages including stock options as a part of compensation can align the interest of the shareholders and the management. We also found that more than 50% of the companies do not bother to disclose the cash bonuses. Therefore, the security exchange commission of Pakistan should take regulatory measures to improve the management compensation disclosures.

#### *3.1.2.2 Board Effectiveness*

This research used six measures of board effectiveness: board size (total number of directors on the board), CEO role duality (1 if CEO is also the chairman of the company, otherwise 0), chairman independence (1 if the chairman is selected from the non-executive directors, otherwise 0), board independence (percentage of non-executive directors in the company), board shareholding (percentage of equity held by the board of directors and their spouse), CEO shareholding (percentage of shares held by the CEO and his/her spouse).

#### *3.1.2.3 Firm performance*

This research categorized firm performance into two ways i.e. firm value (market based firm performance) and firm profitability (accounting based firm performance).

Firm profitability used three indicators: return on assets (ROA= net profit divided by total assets), return on equity (ROE= net profit divided by total equity), return on sales (ROS= net profit divided by sales).

Firm value was measured through: market price of the share (MV), market to book ratio (MTB) and Tobin's Q (market capitalization divided by total assets).

#### *3.1.2.4 Control variable*

Many previous studies investigated the firm size as a determinant of CEO compensation and reported that as a major determinant of CEO compensation (Gigliotti, 2013; Firth et al., 2006). Several measures of firm size have been used by the relevant studies like: total assets (firth et al., 2006); current sales (Mengistae and Xu 2002); market capitalization



(Merhebi et al., 2006). So aligning with the previous studies this study also used firm size as control variable. The firm size was measured through four means: log of total assets, log of total sales, number of executives in the firm, and market capitalization (market value of a share multiplied by outstanding shares).

### 3.2 Analytical Methodology

This research used Partial Least Square (PLS) based Structural Equation Modeling (SEM) to test the impact of board effectiveness and firm performance on the CEO compensation. So, PLS Graph Version 3.0 was used to draw the inferences. It is a second generation powerful statistical technique which allows building models as well as examination of series of relationship. Therefore, PLS is quite useful for theory generation in explanatory sense and also for examination of causal relationships. In case of multiple set of exogenous and endogenous variables, it is most appropriate to use PLS to test the causality relationship (Wolds, 1985). PLS is a prediction oriented approach of regression, which explains the variance to predict the endogenous constructs rather than covariance between the items. It focuses to minimize the variance of dependent constructs caused by the independent constructs rather than reproducing the covariance matrix (Chin, 1998). It calculates the path coefficients and the loading of the indicators toward their latent variables, through which the researchers can eliminate the chances of biased and inconsistent parameter estimates (Cabrita and Bontis, 2008). Yu and Main (2010) stated that through SEM it might be difficult to capture the dealing concepts like board monitoring. Therefore, PLS based SEM is commonly used by the management researchers (O' Regan et al., 2001; Bontis et al., 2002). One can use the covariance based SEM like AMOS, LISREL and EQS for formative measures but it can lead towards the problem of model identification or existence of equivalent model (Chin, 1998). So, the PLS based SEM is suitable to predict the impact of board effectiveness and firm performance on the CEO compensation.

$$(CEOC)_{i,t} = \alpha_i + \beta_1(BE)_{i,t} + \beta_2(FP)_{i,t} + \beta_3(FS)_{i,t} + \varepsilon_{i,t}$$

Where  $(CEOC)_{i,t}$  is the CEO compensation for firm  $i$  for year  $t$ ,  $(BE)_{i,t}$  is the board effectiveness for firm  $i$  for year  $t$ ,  $(FP)_{i,t}$  is firm performance for firm  $i$  for year  $t$  and  $(FS)_{i,t}$  is firm size for firm  $i$  for year  $t$ .

## 4. Empirical Results

### 4.1 Analysis of Results

#### 4.1.1 Evaluating the Measurement Model

Before analyzing the structural model it is recommended to evaluate the measurement model through examining the validity and reliability of the indicators. The reliability test allows determining the extent to which each indicator is capturing its latent. Diamantopoulos and Winklhofer (2001) argued that in case of formative constructs it is not necessary to correlate the indicators. Dimensionality and reliability tests are not necessary for the formative constructs because of irrelevance of factorial unity as well as internal consistence, therefore, composite reliability is not required i.e. Cronbach's Alpha. But Andreev et al. (2009) argued that it is necessary to perform the test of multicollinearity to check the reliability of the indicators. The most commonly used multicollinearity test used by the researchers is variance inflation factor (VIF), so, this study used VIF as a multicollinearity test to examine the reliability of the indicators as suggested by Andreev et al. (2009).

It is recommended to test the validity of the formative constructs before estimating the structural model because it is highly controversial issue (Diamantopoulos et al., 2008). Validity test enables the researchers to check how much an indicator is important in the formation of the construct. Chin (1998) argued that the bootstrapping allows the researchers to analyze the validity of individual indicator as well as for construct by providing the both weights and t-value of all indicators. Correspondingly, MacKenzie et al. (2005) suggested that the strength and significance of a path from indicator to construct provides validity of a formative construct. Petter et al. (2007) stated that the insignificant indicators should be eliminated from the construct to ensure the validity, whereas, Nunnally and Bernstein (1994) argued that the indicators should not be excluded from the construct because it can harm the theoretical perspective of the construct. Therefore, this research uses bootstrapping technique to calculate the weights as well as their significance for each indicator to ensure the validity.

The results of validity and reliability test are given in table 2. The VIF values remain less than 10 for all indicators which indicate that there was no problem of multicollinearity. So there was no issue related to the reliability of the indicators. The weights and the significance of the indicators were calculated through bootstrapping techniques to ensure the validity of the indicators. The results of validity test revealed that among the board effectiveness measurement, the BS, DUAL and BH remained significant contributors and other three measures remained insignificant contributors i.e. BI, CNED and CH. Similarly, for firm profitability measures, ROA was the only measure which was a significant contributor to its construct. While for firm value and firm size constructs, all measures remained as significant contributors. So, aligning with the Bollen and Lennox (1999) this study does not exclude the insignificant indicators to ensure the content validity. After ensuring the validity and reliability, we can estimate and analyze the structural model to draw the inferences.

**Table 1: Validity and Reliability**

Construct Name	Indicators	Item weights	VIF
<b>BE (Board Effectiveness)</b>	BS (board size)	0.636*** (2.970)	1.205
	BI (board independence)	0.176 (0.703)	1.969
	DUAL (CEO role duality)	0.696*** (4.199)	1.418
	CNED (chairman independence)	0.330 (1.052)	1.751
	CH (CEO equity holding )	-0.542 (1.475)	2.453
	BH (directors equity holding)	0.862** (2.252)	2.649
<b>FV (Firm Value)</b>	MV (market price of a share)	-9.438*** (4.096)	3.159
	TQ (Tobin's Q)	1.267*** (11.532)	2.482
	MTB (market to book ratio)	9.159*** (3.850)	3.079
<b>FP (Firm Profitability)</b>	ROS (return on sales)	0.081 (0.438)	1.165
	ROE (return on equity)	-0.128 (0.338)	1.262
	ROA (return on assets)	1.027*** (3.861)	1.473
<b>FS (Firm Size)</b>	AAS (assets size)	-0.627* (1.650)	3.125
	SS (sales size)	-0.575* (1.804)	2.275
	MC (market capitalization)	0.647*** (4.11)	1.484
	NE (number of executives)	0.996*** (5.351)	1.135

\* Significant at 10% \*\* Significant at 5% \*\*\*Significant at 1%

#### 4.1.2 Evaluating the Structural Model

The results of structural model are provided in table 3 and 4. At first stage the influence of each exogenous variable is examined separately (Model 1, 2 and 3), after that influence of individual exogenous variable with control variable is analyzed (model 4, 5 and 6) and at the end, final model investigates the collective influences of all exogenous variables as well as control variables on the endogenous variable (model 7). To further validate the results the model 7 is applied to cross sectional data and the results for model 7 are reported in table 5 for each year separately. The coefficient of board effectiveness is negative and highly significant across all models and also remained negative in cross sectional analysis across all years but it remained significant in last two years 2010 and 2011. These results support our first hypothesis (H<sub>1</sub>): Board effectiveness has negative impact on the CEO

compensation. So, the effective board can facilitate objective determination of CEO compensation and the CEO has lesser chances of being overpaid. The coefficients of firm value and firm profitability remained significant but negative across all models. The cross sectional analysis also exhibit same results. Therefore, we reject our second hypothesis (H<sub>2</sub>): CEO compensation is an increasing function of firm's performance, along with two sub-hypotheses H<sub>2a</sub>: CEO compensation is an increasing function of firm's value, H<sub>2b</sub>: CEO compensation is an increasing function of firm's profitability. These results show that Pakistani companies are facing more agency issues as CEOs might be paid even they perform badly. In Pakistan CEO compensation is not objectively determined. The overall picture is that effective board is helpful in objectively determining the CEO compensation but the current board structure is not that much effective which can link the CEO pay with company's performance. The results revealed that firm size has positive and significant influence on the CEO compensation. The coefficient values of firm size remained greater than other variables which showed that in Pakistan firm size is the major determinant of CEO compensation. The results generated by PLS Graph Version 3.0 for model 7 using panel data are given in figure 1.

**Table 2: Results of Structural Models (Paths analysis)**

Variables /Models	Expected Sign	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
		BE	FV	FP	BE,FS	FV,FS	FP,FS	BE,FV, FP,FS
Board Effectiveness	-	- 0.155*** (-2.747)			- 0.177*** (-3.501)			-0.191** (-3.966)
Firm Value	+		- 0.165*** (-7.896)			- 0.209*** (5.144)		-0.197*** (5.134)
Firm Performance	+			-0.136 (-0.978)			- 0.177*** (-3.565)	-0.111*** (2.533)
Firm Size	+				0.237*** (-4.0661)	0.252*** (3.5856)	0.245*** (-3.332)	0.277*** (-3.761)
R <sup>2</sup> (%)		2.4	2.7	1.9	7.4	8.9	7.7	13.7

\* Significant at 10% \*\* Significant at 5% \*\*\*Significant at 1%

**Table 3: Cross Sectional Results of Model 7**

<b>Variables/Years</b>	<b>Expected Sign</b>	<b>2011</b>	<b>2010</b>	<b>2009</b>	<b>2008</b>	<b>2007</b>
<b>Board Effectiveness</b>	-	-0.233** (2.460)	-0.223** (2.125)	-0.230 (1.373)	-0.155 (0.787)	-0.198 (1.539)
<b>Firm Value</b>	+	-0.194 (0.919)	-0.174 (0.758)	-0.114 (0.721)	-0.184 (1.340)	-0.128 (0.856)
<b>Firm Performance</b>	+	-0.061 (0.483)	-0.221** (2.138)	-0.250** (2.246)	-0.100 (0.576)	-0.245** (1.982)
<b>Firm Size</b>	+	0.233** (2.401)	0.350*** (2.890)	0.343*** (2.616)	0.2610 (1.303)	-0.363 (1.038)
<b>R<sup>2</sup> (in Percentage)</b>		16.6	22.4	23.2	10.4	17.5

\* Significant at 10% \*\* Significant at 5% \*\*\*Significant at 1%

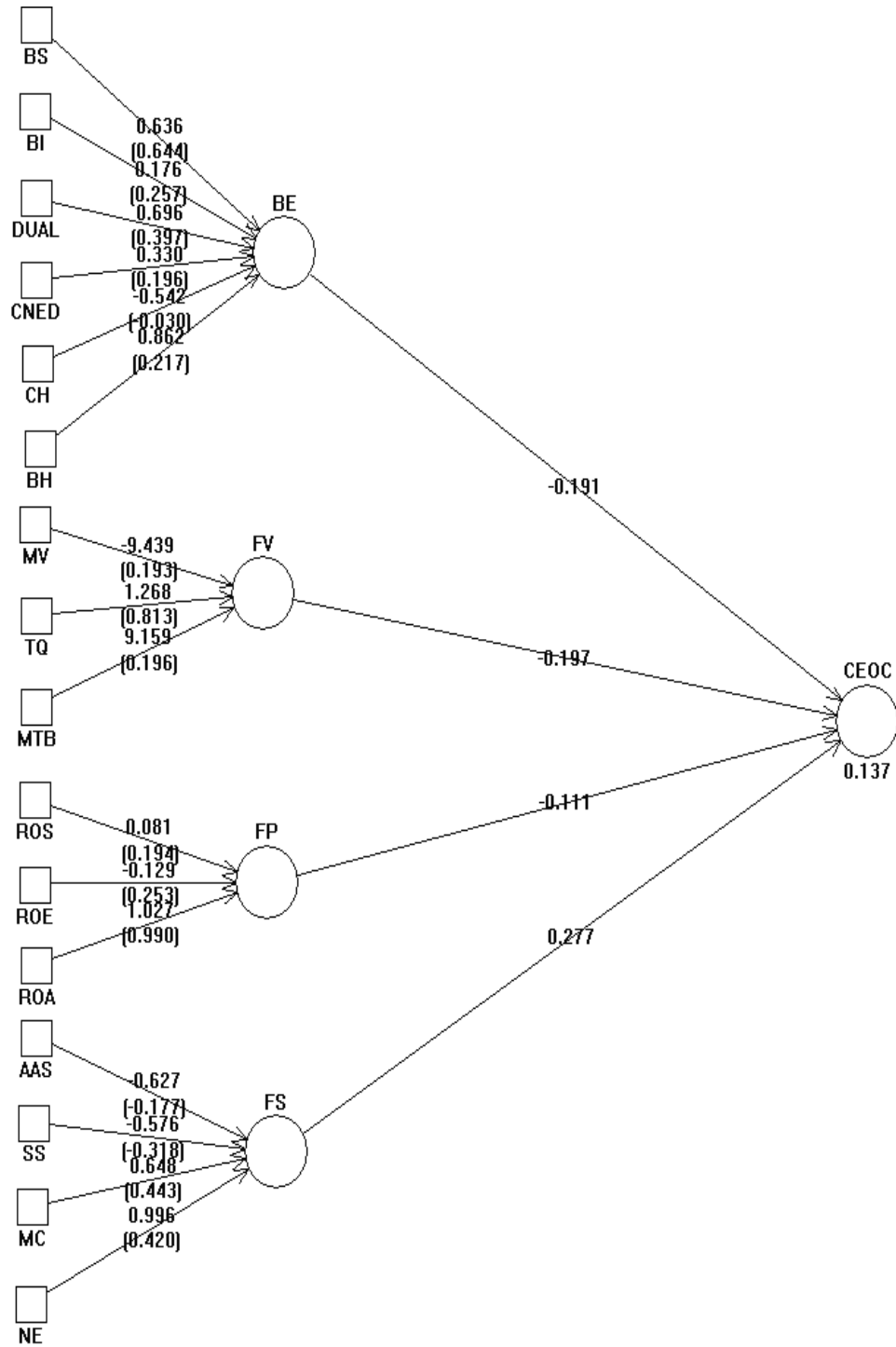


Figure 1: PLS Graph for Model 7

## 5. Conclusion

The aim of the study was to analyze the impact of board effectiveness and firm performance on the CEO compensation. The data used for analysis were extracted from the annual reports of KSE-100 index companies for five years 2007 – 2011 inclusively. The PLS based SEM was used to draw the inferences. The results revealed that effective board monitoring leads towards lower CEO compensation because the effective board can facilitate the objective determination of CEO compensation. Opposite to agency theory we have found that CEO compensation is significantly and negatively linked with the firm's performance. This negative relationship is due to different environment faced by the Pakistani firms. In Pakistan, family ownership is common (World Bank, 2005). The management style in the family owned firms is often autocratic, leading to concerns that some controlling shareholders might treat the company as their own fiefdom for doing anything which can please them (Bond, 1996 and Brewer, 1997). So that's why mostly CEOs are from the family members in Pakistan and they enjoy more power and they can influence their compensation packages. So, under these circumstances there are few chances for objective determination of CEO compensation. Similarly, Makki and Lodhi (2009) reported that human capital efficiency is declining in Pakistan while management compensation is increasing, so, this also puts a question mark on the objective determination of management compensation and represents the issue of corporate governance. The negative influence of board effectiveness also revealed that the effective board would reduce the unwarranted pay of CEO and will try to establish a positive link between CEO pay and corporate performance. So, we can say that the Pakistani board has negative impact on the CEO compensation but the board structure is not that much effective to design such compensation contracts which can link the CEO pay with firm's performance. The results also revealed that CEOs of larger firms enjoyed higher compensation because of complexity of job involved in the larger firms. Like many other studies, we also found that firm size is the major determinant of CEO compensation.

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