

## CEO Compensation, Firm Performance and Corporate Governance: An Empirical Investigation of Saudi Arabian Companies

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**Abstract:** It is becoming a more commonplace than in the past year to have access to Chief Executive Officer's (CEO's) compensation when reading business news. A concern is whether these CEOs are actually being paid for their performance, or for their title and position. The exposure to such information has become a new trend which may be followed by others. It is not easy to make sense of, or assess, how (and why) companies pay their top executives as they do.

This paper examines two major themes: (a) the relationship between CEO compensation and firm performance; and (b) the influence of corporate governance (e.g., board size, board independence, government ownership, large shareholder ownership, and CEO duality) on determining CEO compensation. The data provided consist of all the companies listed on the Saudi Stock Market (Tadawul) for the period 2008-2012. The data were controlled for firm size, growth opportunities, risk, age, and leverage. A significant relationship between CEO compensation and firm performance measures was noted. In addition, a negative and significant relationship between CEO compensation and corporate governance structure (board independence) was observed. This suggests that boards may attempt to use compensation contracts to align executives' actions with company's success. The idea is that CEO performance provides value to the organization. "Pay for performance" is the mantra most companies use when they try to explain their compensation plans. This paper adds more empirical evidence to the idea of CEOs pay being dependent on one's performance.

**Key words:** Corporate governance; Saudi Arabia; CEO compensation; Firm's performance; Saudi Stock Market; Tadawul.

### 1 Introduction

The conflict of interest between Chief Executive Officers (CEOs) and shareholders has been a popular topic in the press and among academics in recent years (Clarke and Branson, 2012). The question arises, is this just a trend that everyone is watching, or is there a real concern as to whether CEOs are being paid appropriately for their performance?

The financial community worldwide has observed that CEO pay has increased without justification based on their performance (Jensen and Murphy, 1990). In addition, investors have started questioning whether CEOs of public companies are pursuing their own self-interest rather than the best interest of their firms, thus, deviating from value maximizing decisions. As a result, an

extensive line of research related to executive compensation has emerged (e.g., Gregg et al., 1993; Conyon, 1995; Cyert et al., 2002; Doucouliagos et al., 2007; Dickins and Houmes, 2009; Barontini and Bozzi, 2009; Melis et al., 2010; Junarsin, 2011; Barontini and Bozzi, 2011; and Connelly et al., 2012). Hannafey (2003) indicated that overcompensated CEOs' ability to influence the firm's economic performance is a complex and challenging issue. Thus, the evidence on the relation between an executive's compensation and the firm's performance is rather mixed (Usman, 2010) and, there are few studies examining this issue in emerging markets.

During the 1990s, a *Wall Street Journal* survey of 325 large U.S. firms revealed that the median CEO's cash compensation (salary plus bonuses) rose by 8% over the previous year to \$1 million, while, over the same period, corporate profits decreased by 4.2% (*Business Week*, 2010). Moreover, in Saudi Arabia, certain economists have argued that some mediocre or losing firms have awarded their CEOs and board members with what appears to be irrational, or out of control, compensation

(Al Roshood, 2010). One can observe from the data that during 2008-09, the mean percentage total compensation and cash compensation for Saudi CEOs increased by 8.7% and 12%, respectively, while net income decreased by 69% during the same period. Interestingly, the total compensation increased by 7.8% while cash compensation marginally decreased by 0.97%; whereas, the net income increased sharply by 177.5% during 2009-10. Then, the total compensation slightly decreased by 0.91% and cash compensation increased by 3.8%, where the net income increased by 65.25% during 2010-11. This was followed by a significant increase in the total compensation and cash compensation by 23% and 14%, respectively. However, the net income decreased by 18%. This result suggests that an increase or decrease in the compensation has no direct relation to improvement in firm performance, an assumption which needs to be tested.

Such observations kindle the current debate over CEOs compensation, and the debate has attracted considerable attention to the governance role played by the boards of directors of Saudi corporations.

**Table 1:** Descriptive statistics for each year as a percentage change.

Year	Total Compensation %	Cash Compensation %	Net Income %	ROA %	RISK %	Leverage %	Growth %
2008-2009	8.669	12.100	-68.87	-16.9	-48	87	-13.3
2009-2010	7.825	-0.970	177.55	8.5	-7	-2.3	-6.5
2010-2011	-0.914	3.800	65.25	-82.1	-82	1.14	17.9
2011-2012	22.918	13.950	-17.96	12.49	61	79	5.5

The escalation of CEO's pay has become a global phenomenon (Lansing and Knoedgen, 2007). It has been argued that annual changes in executives' compensation do not reflect the changes in corporate performance (Jensen and Murphy, 1990), and further purported that executives of poorly performing firms receive relatively larger salaries than their counterparts at well performing firms (Friebel and Matros, 2005).

This study addresses four areas. Firstly, there is a lack of conclusive evidence in the existing literature on a CEO's compensation and his performance. Even though the literature on CEOs' compensation, firm performance, and board structure is quite expansive (and still growing), more irrefutable empirical findings are still lacking (e.g., Tosi et al., 2000; Haid and Yurtoglu, 2006; Carrasco-Hernandez and Sanchez-Marin, 2007; and Ozkan, 2007). Secondly, Saudi companies only use cash-based compensation to reward their CEOs, which is different from methods being practiced in the USA, Canada, or the UK (Matolesy and Wright, 2011). Thirdly, few studies have examined the influence of corporate governance characteristics and firm performance in Saudi firms (e.g., Al-Hussain and Johnson, 2009; Al-Abbas, 2009; Fallatah and Dickins, 2012; Al-Moataz and Hussainey, 2012). Instead, many researchers concentrate on the US and Canadian markets, and a growing number of studies are now focusing on CEOs' compensation within European countries (Barontini and Bozzi, 2009, Barontini and Bozzi, 2011). The literature does not present appreciable research regarding Middle Eastern markets, including Saudi Arabia, which is dramatically different

from that in the western countries. This is because of the fact that the Saudi stock market is not the same as the US and the UK markets. Finally, the author is unaware of any studies that have directly investigated the relationship between corporate governance characteristics, firm performance, and CEO compensations in Saudi Arabia—a market of growing international importance.

The primary findings of this study reveal that companies with higher levels of CEO compensation exhibit higher levels of performance as measured by return on assets. Further, the results show that the compensation of CEOs is a decreasing function of board independence.

The remainder of this paper is organized as follows. Section two provides a literature review and hypotheses development. Section three describes the data utilized in this study and research methodology. Results and conclusions are presented in Sections four and five, respectively.

## **2 Literature review and hypothesis development**

Worldwide, the executive compensation skyrocketed during the last two decades. It is a hotly debated issue, which received overt attention of both the public and the press. Financial scandals, such as WorldCom, Enron, AIG and Lehman Brothers, shook the confidence of investors, and as a result, salaries started being discussed vigorously in the business industry. To restore public confidence, enhanced standards were introduced by the US Congress, under the Sarbanes-Oxley Act of 2002. This Act

ensures that top management certifies the accuracy of financial information, thus, creating an enhanced level of accountability. Furthermore, the financial crisis started in 2006 when the Saudi stock market experienced a major decline, losing 980 points in just one day. Ever since then, investors have been demanding corporate governance reforms. In response to this demand, the Capital Market Authority (CMA), in November 2006, promoted tighter regulations. For instance, the policies of a CEO's compensation and disclosure of the board's compensation in stock markets have been introduced. (e.g., establishing listed firms Audit Committees and Remuneration Committees).

In order to comprehend the corporate governance and its problems, a theoretical framework is required. There are two outermost theoretical keystones in explaining such problems and their subsequent impact on a firm's performance. These are Agency Theory (e.g., Jensen and Meckling, 1976; Fama, 1980; and Fama and Jensen, 1983), and Stewardship Theory. The latter holds an optimistic view of managerial behavior and further suggests that managers are inherently trustworthy and not prone to misappropriation of corporate resources. Additionally, the theory points to the fact that executives are driven to work in the interest of the owners (Donaldson, 1990a, 1990b; Donaldson and Davis, 1991; Davis et al, 1997).

In contrast, agency theory is a more realistic and important concept in corporate governance. It is an inherent cost that exists when shareholders and management do not agree on certain actions that are the best for the business. The seminal work of

Jensen and Meckling (1976) on the agency theory opens the door to a new line of research on CEOs' compensation. The information on CEOs' compensation permitted researchers to empirically test the agency theory by studying the association between a CEO's pay and firm performance (Jensen and Murphy, 1990).

Jensen (1993) also discussed how boards of directors fail to watch and closely monitor the management of firms. In principle, the agency theory provides a basis for predicting whether a CEO's compensation may positively or negatively impact a firm's performance. The agency theory states that the principal (owner) hires an agent (Manager/CEO) to act on his or her behalf. Thus, the decisions made by the CEO have a significant impact on the principal's wealth. Both the principal and the agent wish to maximize their wealth, and in doing so, they will not act necessarily in the best interest of one another. Moreover, the CEO's actions cannot be monitored by the principal. Thus, to sway the CEO to act in the best interests of the principal, an incentive of some kind must be provided. Further, CEOs must fulfill certain performance targets (typically sensitive to accounting and/or market performance measures) to be entitled to available incentive bonuses, which are directly related to how well the outcomes of the CEO's decisions serve the interests of the shareholders (Murphy, 1999).

As the agents are not properly informed, it is expected that they will be satisfied with the additional salaries, and minimize the opportunistic actions, thereby reducing the agency conflicts (Godfrey et al., 2006).

Therefore, the central premise of the agency theory is the executive's compensation. Agents will be motivated to serve the interests of the owners only if there is an oversight incentive in terms of monetary reward. As a means of conflict resolution between the CEO and the owners, executive compensation emerged as an important internal governance mechanism (Main, 1991; Mangel and Singh, 1993; Conyon and Peck, 1998; Bebchuk and Fried, 2003; Coulton and Taylor, 2004; Monks, 2005).

Pay-performance sensitivity is consistent with the idea of efficient contracting and highly performing executives will be paid higher. Is the CEO's compensation related to the performance of the CEO's company? Many researchers have attempted to answer this question, but the results have been mixed. Several studies have demonstrated a positive relation between a firm's performance and the CEO's compensation (Murphy, 1985; Anderson and Bizjak, 2003; Ittner et al., 2003; Brick et al., 2006; Chalmers et al., 2006; and Ozkan, 2007). In a relatively recent study, Sigler (2011) explored the relationship between a CEO's compensation and the firm's performance for 280 U.S. companies. He reported a positive and significant relationship between CEO compensation and firm performance measured by return on equity. However, Johnson (1982), Finkelstein and Boyd (1998) and Tosi et al. (2000) did not observe any such relationship. According to Leighton and Thain (1993) the remuneration package should be attractive to the best available candidate. As discussed earlier, if CEOs have power and ability, they may set their

own pay. This can be done through rent extraction (e.g., excessive compensation schemes) (DeAngelo and DeAngelo, 2000). However, if CEOs are paid based on long-term incentives (e.g., stock options), then inadequately devised stock-based compensation plans may lead to excessive compensation that may damage the firm's value (Jensen et al., 2004). Therefore, CEOs may maximize the short-term shareholders' benefit to increase their own compensation (Maher and Anderson, 1999). However, if CEOs are rewarded on the basis of accounting income, they may try to manipulate the accounting numbers to improve their apparent performance (Deegan, 2006; Godfrey et al., 2006). Since the compensation of most of Saudi CEOs is based on salary (fixed component), one would expect a relationship between executives' compensation and the firm's performance (Accounting measures e.g., ROA), and weak or no relation between the executives' compensation and the firm's performance (market measures).

***H1: All things being equal, there is a positive relationship between the CEO's compensation and the firm's performance (ROA and ROE) and weak or no relationship with firm performance (return).***

The second part of this paper investigates the impact of the board of directors on the compensation of the CEO. Fama and Jensen (1983) argue that governance mechanisms play an important role in mitigating agency costs and reducing conflicts between the management and owners. The boards of directors generally determine the compensation for the CEO. They work in the best interests of the company and

regulate the relationship with stakeholders in an effort to protect their rights.

The Anglo-American model (Market Model) focuses on the separation of ownership and control (agency theory), and is applicable in common law countries, such as the United States, the United Kingdom, and Canada (Luo, 2007). Such markets are characterized as active markets for corporate control. Ownership is generally dispersed, with low levels of government and family ownership, but often, considerable ownership percentage by institutional investors where the main goal is to maximize stakeholders' wealth (Piesse et al., 2011). Conversely, the Saudi market is characterized as having a weaker type of corporate control featuring a greater degree of ownership by the government than in US, UK, and Canada markets. This is not to say that the Saudi model of corporate governance has not been influenced by the Anglo-American model (Fallatah and Dickins, 2012). The Saudi model still focuses on maximizing owners' wealth. It is a one-tier system where a shareholder-elected board of directors is the highest governing body (Fallatah and Dickins, 2012). In such a system, individual stockholders do not directly influence the direction of the company (Keasey and Wright, 1993). Therefore, the role of independent outside directors, ownership structure, and the distinction between the CEO and the Chairman of the Board are important elements in monitoring management's performance (Fallatah and Dickins, 2012).

The board plays an important role in determining the CEO's compensation. Several developed and developing countries have remuneration committees that set the CEO's compensation (Rashid, 2010). The amount of influence the board exerts on CEO's decision making depends on the number, nature, and independence of its members (Ghosh and Sirmans, 2005). All else equal, the board size is known to unfavorably affect the board's ability to discipline the CEO (Core et al., 1999). Jensen (1993) and Yermack (1996) call attention to the fact that communication and coordination problems intensify as board size increases. Jensen (1993, P.850) states "when boards get beyond seven or eight people they are less likely to function effectively and are easier for the CEO to control." Board size has a number of implications for its functioning, and thereby, the firm's performance (Yermack, 1996; Raheja, 2005; Coles et al., 2008). This study hypothesizes that a larger board will have a stronger power differential between the executive and the non-executive directors. Such a board also requires a higher level of total compensation, or may not be able to restrict the executive's compensation. This leads to the following hypothesis:

***H2a: There is a positive relationship between the board size and a CEO's compensation.***

The effectiveness of the board of directors in monitoring firms may be strengthened by using several measures that characterize the composition of the board. For instance, active shareholders have argued for the separation of the Board Chair and CEO, and a number of empirical studies suggest that agency

problems are more pronounced when the CEO is also the Board Chair (Yermack, 1996; Conyon and Peck, 1998; Kyereboah-Coleman and Biekpe, 2006; Dickins and Houmes, 2009). It can be argued that when the CEO is dominant, with power and ability to set his/her own pay, then he or she may extract rent through executive compensation. Bebchuk et al. (2009) argue that a board of directors is weak if the CEO is also the chairman of the board, due to conflict of interest. When board governance is poor, a CEO can set his or her own pay. As such, one would expect there is a positive association between CEO's duality and his compensation.

***H2b: There is a positive relationship between CEO duality and CEO compensation.***

Another measure of a firm's performance is the board's independence. It is a critical issue, which has been investigated thoroughly. Hermalin and Weisbach (2003) state that there is no optimal board structure. However, the association between the board and a CEO's compensation focuses mainly on the extent of the board's independence. Moreover, Fama (1980) claims that when boards are independent, they add value to the firm by providing expert knowledge and monitoring services. Indeed, lack of an independent board makes it difficult to respond to failures caused by conflict of interests between the CEO and owners (Theeravanich, 2013). The presence of (higher proportion of) independent directors is an indication of board's control over the firm. Therefore, it can be argued that there will be a negative relationship between a board's

composition and the executive's pay. It leads to the following hypothesis:

***H2c: There is an inverse relationship between the number of independent board members and the CEO's compensation.***

Large shareholders will also try to avoid unnecessary costs, such as excessive compensation for the CEO and will push for the creation of an incentive system, which directs the CEOs' effort towards value creation (Mendez et al., 2011). It is assumed that a higher concentration gives large shareholders stronger incentives and greater power to monitor management at lower cost (Hu and Izumida, 2008). Large shareholders can have positive influence on the board. They can exert pressure to protect the rights of small shareholders, reduce the expropriation of a CEO, and minimize the manipulation of accounts, thus strengthening the external control system (Aguilera and Jackson, 2003). This variable is measured as the ownership percentage of all large investors. Therefore, one would expect a negative association between large investors and CEO's compensation. If ownership is concentrated in the hands of a few individuals, then the free-rider problem is reduced, or even eliminated as the actions of the CEO are closely monitored. Conversely, if ownership is distributed among several stockholders, none of whom have a significantly large ownership share, then CEOs may retain uncontested control over the organization. This variable was measured as the proportion of the firm's outstanding shares held by large shareholders, including institutional investors and their affiliated

parties who own more than 5% of the shares.

***H2d: There is an inverse relationship between the percentage of ownership held by large shareholders and a CEO's compensation.***

Published literature shows that government ownership influences a CEO's compensation. The data collected reveals that several major Saudi companies are controlled by the government; consequently, there is a considerable variation in the degree of government ownership and control among the listed firms. Numerous arguments that may imply several positive or negative effects of government ownership on corporate governance have been reported in the literature. A large percentage of government ownership may signal to the market that shareholders' wealth will not be impounded, and thus, is an indication of low uncertainty for local investors. In addition, substantial government ownership may prevent large scale government assets stripping, and mitigates extreme rent-seeking behaviors of managers (Kato and Long, 2005). On the other hand, the pay scales in private companies are much better than those in the government controlled firms. Thus, private companies have lucrative offers to attract capable executives with superior managerial skills. Therefore, it could be argued that firms with greater government ownership and control are less capable of adopting more efficient incentive measures, thus decreasing the ability to attract skilled and experienced CEOs. As such, the association can go either way and one would assume the following:

***H 2e: There is a relationship between government ownership and CEO compensation***

### 3 Research Methodology

#### Sample Selection

Empirical studies on CEOs' compensation in Saudi Arabia have suffered from scarcity of data on CEO's pay—information that for a long time has not been subject to mandatory disclosure. Only recently, the Central Markets Authority (CMA) adopted regulations that require companies to disclose information on the CEO's compensation. In Saudi Arabia, this rule was enforced in 2008. Data on CEOs' compensation have been manually collected from annual reports published by the companies listed on the Saudi Stock Exchange. The sample accounts for 455 firm-years, after deleting missing data, and following prior research financial institutions were also deleted.

#### Variables Definition

CEO compensation is the dependent variable in this study while employing the regression model to estimate the conditional expectations. The compensation data for 2008-12 was available only on aggregate basis for the top five highly paid executives, under the classifications: base compensation (salary), bonuses, and other compensation. The sum of these variables defines the total compensation.

An executives' annual compensation for the USA and the UK companies typically consists of base salary, bonuses, stock option grants, restricted stock grants, and other pay (e.g., retirement plans). These components can be



categorized into “fixed compensation” and “incentive pay”. The Saudi CEOs have only fixed compensation with minimal incentive pay structure. The natural log of total compensation has been used following Dogan and Smyth (2002), Abdullah (2006), Doucouliagos et al. (2007) and Conyon and Lerong (2011). This natural log can mitigate the difference in the total compensation across firms, and hence, reduces different variables heteroskedasticity.

Market and accounting performance measures are the variables used to represent firm performance. Stock Price Returns (RT) is used for market performance; while Return on Assets (ROA) and Return on Equity (ROE) are used as accounting performance measures. Based on the findings of the research, there is a positive association between accounting data and a firm's performance. Clearly, the accounting performance measures have been used with the expectation to find significant associations between the CEO's compensation and those proxies.

Stock return is the percentage stock market return for the prior year. Return on assets is the percentage corporate return on assets, or the ratio of earnings to average total assets. Return on equity is the net income divided by average total equity. The performance of a company depends on many factors (e.g., economy), but ROA and ROE remain the most important factors (Usman, 2010).

In view of the second hypothesis, the influence the board exerts on CEO's decision making depends on the number, nature, and independence of board members (Ghosh and Sirmans, 2003).

Depending on the regression model, independent variables in this study are ownership structure, board's composition (in the form of representation of independent directors), board size, and CEO duality. Two ownership variables are considered in the model. Firstly, large shareholder's ownership (SHAREOWN) as large individual investors and institutional ownership; secondly, government ownership (GOVOWN). SHAREOWN is the percentage of shares owned by individual investors, or institutional investors. GOVOWN is the percentage of shares owned by the government. Board composition (Independence Ratio) is the percentage of independent directors to total directors sitting on the board. Board size (BSIZE) is the natural logarithm of total number of board members in a board. CEO-duality (CEOD) is a binary, which is equal to one (1) if the post of CEO and Chairperson is held by the same person, otherwise zero (0).

### Control Variables

Depending on the regression model, this study considers a number of control variables. These are leverage, firm's age, firm's size, growth, and risk. Leverage reflects the influence of the capital structure and is calculated as the percentage of total debt to total assets. Jensen (1986) suggests that greater debt usage can serve as a good corporate governance mechanism to mitigate agency problems. Therefore, debt may increase the firm's return on stock by minimizing its financing cost. Due to Jensen's (1986) free cash flow theory, companies with a high debt ratio have an interest payment commitment and,

therefore, are less able to make excess compensation. The firm's age may also influence the performance; older firms are most likely to be more efficient than younger firms (Ang et al., 2000). Additionally, a firm's age may influence the executive's pay, as it may attract managerial talent. A variable firm age (AGE) is defined as the natural logarithm of the number of years the firm has been in existence. The firm's size is an important variable affecting the CEO's compensation (Finkelstein and Hambrick, 1989), as well as firm's performance (Demsetz and Lehn, 1985; Short and Keasey, 1999); since large firms have more capacity to generate internal funds (Short and Keasey, 1999; Majumdar and Chhibber, 1999). Further, large firms suffer from task complexity. As a result, the executive may be required to perform multiple functions in large firms (Berg and Smith, 1978), making it a must to hire the better performing CEOs to maximize the firm's productivity (Merhebi et al., 2006). Larger firms have the ability to pay higher compensation and have greater need for higher quality managerial talent (Conyon, 1997; Core et al., 1999; Firth et al., 2006; Merhebi et al., 2006). A competitive market may allocate talented people to higher level positions in larger firms (Brunello et al., 2001). This study considers the natural logarithm of total net sales as firm size (SIZE) as well as the natural logarithm for total assets. This study considers growth (GROWTH) as the ratio of the market-to-book; it is calculated as the market value of equity divided by book value of equity, which may also influence the firm's performance, as well as CEO's compensation (Core et al., 1999). Firm risk is a potentially important determinant

of the level of executive's compensation (Core et al., 1999). Risk (RISK) is included as a control variable for the level of compensation, and following Barontini and Bozzi (2011), it is measured as the natural logarithm of stock returns standard deviation over a year (12 months).

### Specifications of the Regression Model

To test the hypotheses, the two sets of models were used. The first one was used to estimate the general sensitivity of pay to performance, while the second was utilized to estimate the sensitivity of pay, corporate governance, and performance. The first model is an OLS regression with firm and time fixed effects and can be denoted as follows:

#### Model 1

$$\text{LogCOMP}_{it} = \alpha + \beta * \text{Performance}_{it} + \chi_i + \gamma_t + \varepsilon_{it} \quad (\text{Equation 1})$$

$$\text{CEO's compensation}_{it} = \alpha_0 + \beta * \text{Performance}_{it} + \phi_{it} \text{ control variables} + \chi_i + \gamma_t + \varepsilon_{it} \quad (\text{Equation 2})$$

$$\text{CEO's compensation}_{it} = \alpha_0 + \beta * \text{Performance}_{it} + \theta_{it} \text{ corporate governance variables} + \phi_{it} \text{ control variables} + \chi_i + \gamma_t + \varepsilon_{it} \quad (\text{Equation 3})$$

The second model helps estimating the sensitivity of compensation to corporate governance, and performance. The most popular way to deal with unobserved causality is to use an Instrumental Variables approach. To do so, a valid instrument for the performance measure needs to be identified and thus estimate the model using two-stage least squares (2SLS) method.

#### Regression Model -2

In order to examine the influence of ownership and board structure on executive's pay, the following model was developed:

$$Y_{it} = \alpha + b_1 \text{SHAREOWN}_{i,t} + b_2 \text{GOVOWN}_{i,t} + b_3 \text{INDCEO}_{i,t} + b_4 \text{BSIZE}_{i,t} + b_5 \text{CEOD}_{i,t} + b_6 \text{AGE}_{i,t} + b_7 \text{AGE2}_{i,t} + b_8 \text{SIZE}_{i,t} + b_9 \text{GROWTH}_{i,t} + b_{10} \text{RISK}_{i,t} + b_{11} \text{LEVERAGE}_{i,t} + \varepsilon_{it} \quad (\text{Equation 4})$$

$$\text{CEOCOMP}_{i,t} = \alpha + \beta * Y_{i,t} + \theta_{it} \text{ corporate governance variables} + \varphi_{it} \text{ control variables} + \chi_{it} + \gamma_{it} + \varepsilon_{it} \quad (\text{Equation 5})$$

Where,  $Y_{i,t}$  is alternatively  $\text{ROA}_{i,t}$  and  $\text{ROE}_{i,t}$ , and  $\text{Return}_{i,t}$  for  $i$ th firm at time  $t$ .  $\text{CEO COMP}_{i,t}$  is the natural logarithm of executive pay for  $i$ th firm at time  $t$ .

In order to see the relationship between CEO's compensation and these variables, equations one, two, three, four, and five were re-estimated by replacing the dependent variable total compensation by cash compensation. Cash compensation includes salary and bonus only. Table 7 reports the results of the regressions of cash compensation on current performance. Equation (5) uses ROA, ROE and return representing model 1, 2, and 3, respectively as measure of firm performance. Additionally, total compensation is used as a replacement for cash compensation representing model 4, 5, and 6, respectively.

#### 4 Empirical Results Descriptive Statistics

The Jarque-Bera Normality Test was employed for testing normality of the data. The residuals were normally distributed without rejecting the null hypothesis. The Regression Specification

Error Test (RESET test) did not detect any misspecification, thus, confirming that the model was correctly specified. The data analyzed did not show any signs of multi-collinearity. The Variance Inflation Factor (VIF) was used to detect the multi-collinearity. Anderson et al. (1998) state that if the values exceed 10, then it might become a cause of concern. Nevertheless, the model indicates that the highest VIFs was 2.097. Since the outliers, detected by Cook's Distance, can bias parameter estimates, they were examined to ensure the validity of the results. As the pragmatic approach dictates, if the value of Cook's Distance is more than two, then it is an indication of influential observations (Anderson et al., 1998). No unusual observations were noticed.

Table 5 defines the variables used in the study while Table 2 summarizes the statistics of CEOs' compensation in the sample. The descriptive statistics include: mean, median, minimum, maximum, and standard deviation.

Table 2 summarizes the statistics of CEOs' compensation in the sample. The descriptive statistics for the variables used to measure economic determinates and corporate governances are shown here. Table 2 presents descriptive statistics of the relevant variables in the sample panels. The average cash compensation and total compensation over the four-year period are \$1.7 million and \$2.2 million, respectively; these are much higher than the corresponding median values of \$1.3 million and \$1.65 million.

**Table 2: Descriptive Statistics.**

	N		Mean	Median	Min	Max	Standard Deviation
	Valid	Missing					
	ROA	454					
ROE	455		7.5	5.15	-82.61	111.17	.014
Return	455		-8.6	0	-130.24	49.03	.025
Total Cash Comp	455	0	6.4E6	5.1E6	0	80633852	6.2E6
Total salary	455	0	4.8E6	3.9E6	0	7.9E7	5E6
Total	455	0	3.363E6	2.67E6	0	7.66E7	4.38E6
Bonus	455	0	1.9E6	498114	0	63000000	4.77E6
Total Compensation	455	0	8.3E6	6.2E6	0	8.5E7	8.7E6
Total Assets	455	0	1.5E11	2.02E9	2244348	1.5E13	1.3E12
Total Equity	455	0	7.6E10	1.2E9	11546500	7.1E12	6.6E9
Sales	455	0	3.03E10	7.8E8	0	3.9E12	2.7E11
Net Income	455	0	5.9E9	8.7E7	-2.99E10	7.06E11	5.35E10
RISK	455	0	33.15	28	0	96	26
Growth	455	0	2.04	1.63	0	31.90	1.9
Leverage	455	0	42.42	31.23	0	13.82	70.8
Large investors	455	0	21.7	14.8	0	95	22
Ownership%	455	0	.66	1	0	1	.47
CEO Duality	455	0	8.34	8	4	12	1.57
Board Size	455	0	.67	.75	0	1.8	.31
Independent Ratio	455	0	11	0	0	84	20.4
Government Ownership							

The mean of accounting performance measures (ROA and ROE) are 4.7per cent and 7.5per cent respectively, while the mean of stock market returns is -8.6 per cent, and the average amount of sales is \$ 8.08 billion. From the sample used one can notice that the average board size is eight members and remains stable for all years under study. Also, the average government ownership remains constant at 11% for all the years. However, large investors' ownership average was 27%. This percentage fluctuates over time due to the market crash.

Table 3 presents the Pearson correlation coefficients for the variables used in the models. The data in this table indicate that the correlation among the independent variables is fairly acceptable, with the

highest correlation being 0.67 ROA. The high correlation between total CEO compensation and cash compensation may be attributed to the fact that there is a strong relationship between the two variables. The correlations between the variables are said to be problematic if the absolute correlation coefficient is more than 80% (Anderson et al., 1998). This is not the case with respect to all the variables used in the model. As expected, leverage, government ownership, board size, and risk are significantly correlated with the total compensation, and cash compensation.

#### ***Testing the Assumptions in the Models***

Tables 4 and 5 present the results of estimating the model using OLS. For comparative purposes, OLS estimates for

the individual equations are also presented in Table 4. It shows the regression results when running OLS on performance measures. Results indicate that all the performance measures (ROA and ROE) are significant, but not the return. It should be noted that the findings of the reported study are consistent with the prior research. The results suggest a positive and significant relationship between a CEO's compensation and the performance measures; and that the returns are insignificant. Since a CEO's compensation is almost fixed, 69.5% of the total compensation is salary for the top five executives, 15% non-executive remuneration, 12% bonus, and 3.5% is categorized as others. Consequently, there appears to be no impact of the market performance on a CEO's compensation. Further, this indicates that most of a CEO's compensation is attributed to short-term incentive mechanisms. This may explain the significance of ROA and ROE. Also, sales and total assets are positive and significant factors. That is, firm size turns out to be an important determinant of a CEO's compensation. The results are consistent with those reported by Benito and Conyon (1999), and Conyon (1999) who studied the UK market; Dogan and Smyth (2002) who studied the Malaysian market; Cheng et al. (2005) who studied the Hong Kong market; Doucouliagos et al. (2007) who studied the Australian market; and Mendez et al. (2011) who studied the Spanish market. This has led many researchers to think that if CEOs have to increase their incentives and personal economic gain, it could be achieved by increasing the firm size. Also, CEOs in large firms draw higher compensation, as they are expected to be highly talented with diversified experience.

**Table 3:** Correlation matrix for the variables used in the study.  
(Pearson correlation coefficients, P-value, are provided in parentheses)

Control Variables		LOGY	LOGY1	Return	ROA	ROE	Government Ownership	Number of Board members	Number of Board members who are Independent	CEO Duality	
LOGTA & LOGPROFIT & M/B & Standard Deviation	ROA	Correlation	1.000	.646	.166	.151	-.019	.387	.306	-.145	.021
		Significance (2-tailed)	.	.000	.017	.030	.789	.000	.000	.037	.763
	ROE	Correlation	.646	1.000	.064	.069	.027	.071	.024	.106	.007
		Significance (2-tailed)	.000	.	.357	.320	.702	.309	.727	.127	.917
	Return	Correlation	.166	.064	1.000	.107	-.054	.162	.039	-.137	.332
		Significance (2-tailed)	.017	.357	.	.125	.442	.020	.573	.050	.000
	EPS	Correlation	.151	.069	.107	1.000	-.019	.080	.059	-.066	.121
		Significance (2-tailed)	.030	.320	.125	.	.783	.249	.398	.345	.082
	LogCOMP	Correlation	-.019	.027	-.054	-.019	1.000	-.068	-.096	-.033	-.071
		Significance (2-tailed)	.789	.702	.442	.783	.	.330	.169	.632	.312
	LogCashComp	Correlation	.387	.071	.162	.080	-.068	1.000	.462	-.048	-.084
		Significance (2-tailed)	.000	.309	.020	.249	.330	.	.000	.489	.231
	Log TA	Correlation	.306	.024	.039	.059	-.096	.462	1.000	.206	-.059
		Significance (2-tailed)	.000	.727	.573	.398	.169	.000	.	.003	.400
	LogTE	Correlation	-.145	.106	-.137	-.066	-.033	-.048	.206	1.000	-.052
		Significance (2-tailed)	.037	.127	.050	.345	.632	.489	.003	.	.454
	Log Sales	Correlation	.021	.007	.332	.121	-.071	-.084	-.059	-.052	1.000
		Significance (2-tailed)	.763	.917	.000	.082	.312	.231	.400	.454	.

**Table 4: OLS Regression of a CEO's total compensation.**

Equation (1)

Independent Variable	ROA	ROE	Return
Intercept	6.63 (0.000)***	6.63 (0.00)***	6.7 (.000)***
Coefficient (Sig)	.016 (0.00)***	.011 (.000)***	.003 (.028) *
Adjusted R2	3.8%	4.7%	.8%

\*\*\* Indicate statistical significance at .001 level

Thus, risk is also significant indicating positive relationship between the risk and pay.

A CEO's influence variable is positive and significant. That is, CEOs in firms with CEO duality may receive more compensation compared to those without duality. This evidence demonstrates the severity of the agency problems in such firms. Thus, the government ownership and block ownership are insignificant.

Due to the limitation of OLS, the finance and accounting literature suggests using 2SLS. In equations 3 and 4, four control variables (firm size, growth opportunities, ownership, and risk) have been added similar to that done by Abdullah (2006), Doucouliagos et al. (2007), and Barontini and Bozzi (2011). The CEO's total compensation is an independent variable. Government ownership, board size, number of independent board members, and CEO duality are the explanatory variables. The performance measure variables, and the control variables, are also added.

The author finds a significant relationship between accounting performance (ROA, ROE) and insignificant relationship with market measure (e.g., return) and CEO total compensation as shown in Table-6.

Executive compensation effectively aligns executive interests closer to owner's interest in the agency framework. Appropriate pay and other incentives should be provided to CEOs in recognition of their work value accordingly. (Jensen and Meckling, 1976). The findings suggest that it implies in Saudi firms as there exists a contemporaneous relationship between CEO compensation and firm performance. The executive compensation is positively and significantly related to firm performance (ROA), as shown in columns (1) and (6) of Table 7. It appears that executives were rewarded in current periods for their current performance. Overall, the evidence is supportive to the notion that high performance outcome of the firm is the one of the explicit determinant factors of executive compensation in Saudi firms. These findings are consistent with those by Murphy, 1985; Anderson and Bizjak, 2003; Ittner et al., 2003; Brick et al., 2006; Chalmers et al., 2006; and Ozkan, 2007 and Sigler, 2011).

The only accounting performance measures that have marked influence on

cash compensation and total compensation are ROA and ROE are shown in equation (6), columns (1) to (6). As expected, the coefficients are positive but very small. The results show that executive compensation rises with the increase in accounting performance; and not compensated in cash with the raise in market performance. Furthermore, the results show that CEOs are paid more for higher accounting returns for shareholders and debtholders, who benefit from higher ROA.

The risk coefficient of estimate is significant. This interesting finding is consistent with the assumptions obtained from developed economies (e.g., the USA, and the UK). That is, tying the compensation to firms' performance shifts risk away from owners onto executives, and may result in inefficient risk sharing. Being on higher risk, CEOs will demand higher compensation. It means compensation is directly affected by the risk involved (Meulbroek, 2001; Jin, 2002; Lulseged and Christie, 2002). Thus, it can be inferred that managing riskier firms, CEOs are rewarded through cash compensation for their specialty of exploiting growth opportunities under such circumstances. However, the impact of growth ratio and leverage on a CEO's compensation are insignificant.

A negative and statistically significant relationship appears between the total compensation (cash compensation) and the board independence, as shown by the regression analysis. This relationship marks the extent of independence of the board of directors; and is an important factor that determines CEOs'

compensation, thus, supports the hypothesis. The result is similar to that reported by Cheung et al. (2005) and Mendez et al. (2011). Independent CEOs add potential economic value to Saudi Arabian firms. It is supported that independent CEOs of Saudi firms are able to ensure the checks and balances of accountability and management activities as implied by the results.

The board size, however, has no effect on Saudi CEOs' compensation. This suggests inefficiency in larger boards. Surprisingly, CEO duality is insignificant indicating that firms with CEO duality may receive more compensation. If CEO duality had a significant influence on compensation, it would support the potential agency problem in firms with CEO duality. Consistent with conventional wisdom, powerful CEOs (here, the ones with dual titles) benefit themselves at the expense of the company and its owners.

There is an insignificant and direct relationship between CEOs' compensation and government ownership and large investor ownership with regard to ownership structure. The results are consistent with those in Malaysia (Dogan and Smyth, 2002) and China (Conyon and He, 2011). That is, when the compensation is fixed, ownership structure does not play a role in setting CEOs' compensation, as in the case of Saudi Arabia.

### **Robust tests**

The sample was divided into profit firms and loss firms in order to determine



whether the observed association between the level of compensation and the board structure are due to a misspecified model of the economic determinants of the level of CEO compensation. Then the two stage regression (2SLS) was run. If the association between compensation and board structure reflects the degree of managerial entrenchment, one would expect to observe negative association between the measure of compensation and performance. This has been observed when companies are making profit; the performance is negative and not significant. This reflects no entrenchment. No association (or perhaps a positive association) between the predicted compensation and the performance is expected if the compensation and board structure reflects some dimension of the firm's demand for a high quality CEO. This has been observed when firms are making losses where there is a positive significant association. Thus, there is a need for stringent governance and control procedures to protect the interest of the owners. Moreover, the relationship is robust across alternative specifications of the model. Regression on lagged performance was also examined. The results show that past performance does not have a significant influence on cash or total compensation.

## 5. Conclusion

Assessing a CEO's compensation does not mean simply the base salary; it is the total package including bonuses, stocks, perks, etc. However, the CEO's control over the information makes it difficult to determine exactly the total compensation package for them. Therefore, interpreting

the numbers is not that straightforward. It is worthwhile for investors to see both the positive and the negative sides of the compensation program. There is a convincing argument that a CEO's compensation does not depend on firm's performance. This study examined the relationship between the CEO's compensation and the performance of the CEO's company and its corporate governance, controlling for firm size, growth, risk, and profitability. The study concludes that there is a statistically significant and positive relationship between the CEO's pay and the performance of the company and its governance.

This evidence is consistent with the view that a firm's CEO compensation policy should be designed to reduce the agency costs between him and the shareholders. It suggests that policymakers should focus on designing compensation instruments that concentrate on long-term, rather than short-term incentives (e.g., stock options) that tend to maximize the long-term value of the firm (Lipman and Hall, 2008; Gong, 2011). Therefore, policymakers may wish to encourage the use of compensation contracts that tie a CEO's pay to the actual future performance of firms. Such contracts bring into congruence the goals of the CEO with those of the owners (e.g., to maximize the value of their firms).

The association between the level of CEO's compensation and the firm's performance is examined using a cross sectional multiple regression. The regression model also contains two

indicator variables that control for the year in which the compensation was paid and seven indicator variables that control for industry membership. The coefficients for the year and industry indicator variables are not reported as they are not of direct interest to this study. Nonetheless, the results were consistent.

When studying the level of cash compensation, it was noted that the firm's performance does affect the level of cash compensation. Hence, there is a positive and significant relationship between the compensation of a CEO and the performance of the company. Therefore, the study finds evidence to support the

hypothesis that there is significant relationship between a CEO's compensation and the firm's performance.

In summary, in Saudi stock market firms, cash compensation (salary and bonus) appears to remain the most dominant form of executive compensation, and any study of executive compensation in Saudi's listed firms ought to consider at least cash compensation. Furthermore, it is expected that the inclusion of non-cash forms of compensation will change the main results of the study, at least qualitatively.

**Table 5: Definitions.**  
*(Dependent and treatment variables)*

VARIABLE	DEFINITION	Predicted effect on CEO Compensation
Endogenous CEOs Compensation	Natural Logarithm of CEO total compensation which is the sum of salary, annual bonus, board allowance, board remuneration and other benefits.	
ROA	Percentage corporate return on assets or the ratio of earning to average assets. calculated as the ratio of net income to total book value of assets	+
Exogenous variables		
Return	Percentage of stock market return for firm i at time t ( $P_t - P_{t-1} / P_t$ )	+
ROE	Percentage of corporate return on equity or the ratio of earning to average equity	+
LogSales	Natural logarithm of total sales for firm i at time t	+
Leverage	The ratio of total debt to total equity for firm i at time t	-
RISK	it is measured as the natural logarithm of stock	+

	returns standard deviation over a year (12 months).	
CEO Duality	A dichotomous variable equal 1 if the firm i's CEO is also the chairman of the board at time t, and 0 otherwise	+
B Size	Total number of board members for firm i at time t	+
B Independence	The ratio of non-executives directors to total board members for firm i at time t	-
GOWN	A dichotomous variable equal 1 if the Government owned shares in firm i at time t, and 0 otherwise	NA
SHAREOWN	A dichotomous variable equal 1 if the firm i has an investor who owns at least 5% of the shares outstanding for firm i at time t	-
Growth	Market to book ratio is the market value divided by total assets	+
Industry	Series of dummies for the main industry by Saudi stock Exchange (TASE) classification	
Year	Series of dummies for the calendar year	

Table 2 reports the sample of statistics for the principal variables. It shows the firms characteristics over the period of 2008-2010. Cash compensation includes the salary and bonus given to the CEO. Total CEO Compensation is the sum of the salary, bonus, and others (e.g., allowance for attendance). Performance measures are taken in terms of Return on Equity, Return on Assets, Sales, and Stock Price Return. Control variables are firm size, growth, risk, and leverage. Firm size is taken as the natural log for total assets, Growth is taken in terms of market to book value, and the leverage is

calculated as total debt divided by total assets. Ownership percentage is the percentage owned by the government, board size is the number of board members in the company, number of meetings is the number of meetings hold during the year, attendance rate is the percentage of members' attending the board meetings during the year, Independence is the ratio of members who are outside the company divided by board size. CEO duality is a dummy variable equal one if the CEO is the chairman of the board and zero otherwise.

**Table 6:** OLS Regression of a CEO's total compensation.  
 $\text{Log (COMP)}_{it} = \alpha_0 + \beta_1 \text{Perf}_{it} + \varphi \text{it control variables} + \varepsilon$  (Equation 2)

Independent Variable	Equation2 (ROA)	Equation 2 (ROE)	Equation 2 (Return)
Intercept	5.072 (.00)***	5.241 (.00)***	5.193 (.00)***
ROA	.012 (.000)***		
ROE		.008 (.000)***	
Return			0.0 (.906)
Log Sales	.190 (.000)***	.179 (.000)***	.188 (.000)***
RISK	.349 (.000)***	.373 (.000)***	.416 (.000)***
Growth	-.019 (.066)	-.017 (.099)*	-.014 (.193)
CEO Duality	.112 (.020)*	.109 (.023)*	.095 (.059)*
Board Size	.014 (.320)	.015 (.286)	.020 (.164)
Independent Ratio	-.107 (.111)	-.118 (.076)*	-.107 (.128)
Government Ownership	-.038 (.707)	-.024 (.824)	.030 (.791)
SHAREOWN	-.082 (.354)	-.079 (.365)	-.071 (.443)
Time fixed effect	YES	YES	YES
Industry fixed effect	YES	YES	YES
Adjusted R2	37.8%	38.5%	32.3%

\*Indicate statistical significance at .1 level

Table 4 relates to Regression CEO total compensation. Natural log of total cash compensation including salary, bonus, and others is used as the dependent variable. Performance measures are taken in terms of Return on Equity, Return on Assets, Sales, and Stock Price Return. Control variables are firm size, growth, risk, and leverage. Firm size is taken as the natural log for total assets; growth is taken in terms of market to book value; and leverage is calculated as total debt divided by total assets. Ownership percentage is the percentage owned by the government, board size is the number of board members in the company, number of

meetings is the number of meetings hold during the year, attendance rate is the percentage of members' attending the board meetings during the year, Independence is the ratio of members who are outside the company divided by board size. CEO duality is a dummy variable equal one if the CEO is the chairman of the board and zero otherwise.

Table 5 relates to Regression CEO cash compensation. Natural log of total cash compensation including salary is used as the dependent variable. Performance measures are taken in terms of Return on Equity, Return on Assets,

Sales, and Stock Price Return. Control variables are firm size, growth, risk, and leverage. Firm size is taken as the natural log for total assets; growth is taken in terms of market to book value; and leverage is calculated as total debt divided by total assets. Ownership percentage is the percentage owned by the government, board size is the number of board members in the company, number of meetings is the number of meetings hold during the year, attendance rate is the percentage of members' attending the board meetings during the year, Independence is the ratio of members who are outside the company divided by board size. CEO duality is a dummy variable equal to one if the CEO is the chairman of the board and zero otherwise.

Table 7 shows two stage least squares (2SLS) regression results for various performance variables, corporate governance variables on CEOs total compensation and cash compensation for

2008-2012 Saudi listed firms. Natural log of total cash compensation including salary is used as the dependent variable. Performance measures are taken in terms of Return on Equity, Return on Assets, Sales, and Stock Price Return. Control variables are firm size, growth, risk, and leverage. Firm size is taken as the natural log for total assets, Growth is taken in terms of market to book value, and leverage is calculated as total debt divided by total assets. Ownership percentage is the percentage owned by the government, board size is the number of board members in the company, number of meetings is the number of meetings hold during the year, attendance rate is the percentage of members' attending the board meetings during the year, Independence is the ratio of members who are outside the company divided by board size. CEO duality is a dummy variable equal to one if the CEO is the chairman of the board and zero otherwise.

**Table 7:** 2 SLS Regression CEO Total compensation.

Independent Variable	1	2	3	4	5	6
Intercept	6.362 (.00)***	6.154 (.00)***	6.154 (.00)***	6.362 (.00)***	6.364 (.00)***	6.250 (.00)***
ROA	.014 (.012)*			.016 (.007)***		
ROE		.012 (.01)***			.012 (.01)***	
Return			.0(.809)			.001 (.691)
LogSales	.109 (.189)	.089 (.308)	.078 (.457)	.055 (.534)	.033 (.715)	.016 (.894)
RISK	.007 (.018)**	.005 (.055)*	.010 (.005)** *	.007 (.017)**	.006 (.036)*	.009 (.021)**
Growth	-.021	-.041	.063	-.008	-.018	.089

	(.684)	(.477)	(.128)	(.879)	(.758)	(.052)**
Leverage	.001 (.764)	.001 (.579)	.0 (.945)	.001 (.689)	.001 (.507)	.00 (.955)
Board Size	.056 (.232)	-.028 (.898)	.082 (.140)	.037 (.458)	.282 (.217)	.086 (.165)
Duality	-.011 (.959)	.069 (.136)	.098 (.703)	.296 (.197)	.054 (.268)	.417 (.145)
Independence Ratio	-.008 (.06)*	-.007 (.123)	-.011 (.033)**	-.007 (.119)	-.007 (.113)	-.009 (.108)
Government Ownership	.001 (.845)	.001 (.804)	.009 (.470)	.007 (.147)	.008 (.117)	.010 (.124)
SHAREOWN	.002 (.523)	.001 (.696)	.004 (.403)	.003 (.409)	.002 (.570)	.004 (.359)
Time fixed effect	YES	YES	YES	YES	YES	YES
Industry fixed effect	YES	YES	YES	YES	YES	YES
Adjusted R2	20.3%	19.7%	15.5%	19.3%	19.3%	13.1%

\*\* Indicate statistical significance at 0.05 level

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