

# CEO Compensation and Unobserved Firm Performance in Pakistan

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## Abstract

The study examines whether higher CEO compensation is related to unobserved future firm performance in an emerging market, Pakistan. Further, it extends its scope to analyzing the impact of group affiliation and ownership concentration on the relationship between CEO compensation and future firm performance. The study uses an unbalanced panel data consisting of 1508 firm-year observations from 225 non-financial listed companies in Pakistan Stock Exchange (PSX) for period 2005 to 2012. The multiple regression models adjusted to heteroskedasticity and autocorrelation in error terms are used. The study finds that, in general, CEO compensation is positively associated with future operating performance. However, higher CEO compensation leads to lower operating performance in firms that have lower ownership concentration and are affiliated with business groups. When firms are not affiliated with any group and have high ownership concentration, the relationship between excessive CEO compensation and future operating performance becomes insignificant. Given that efficient compensation packages may lead to long term value creation to shareholders and reduce agency problems, this study highlights an important moderating role of ownership concentration and group affiliation of the firms in emerging markets.

**Keywords:** Corporate Governance, Executive Compensation, Firm Performance, Group Affiliation, Emerging Markets.

**JEL Classification Code:** G30, G32, M10, M12.

## 1. Introduction

The corporate boards involve in arm's length transaction with CEO and design such compensation plans which provide CEO with efficient incentives to maximize the shareholder value (Eisenhardt, 1989; Jensen & Meckling, 1976). This predicts a positive link between CEO compensation and firm performance. However, Bebchuk and Fried (2003) challenge the assumption of arm's length transactions between CEO and the board over

compensation arrangements and state that CEOs, being in power, set their own pay excessively which is less likely to correlate with firm performance. Therefore, CEO compensation contract is an agency problem itself rather than a tool to reduce agency problems. This debate continues as the empirical evidence does not fully support any of the two viewpoints. Several studies (e.g., Conyon & He, 2011; Frye, 2004; Jensen & Murphy, 1990; Laan, Ees, & Witteloostuijn, 2010; Murphy, 1999; Ozkan, 2011) document a significant positive link between CEO compensation and firm performance while several other studies (see, Bebchuk, Fried, & Walker, 2002; O'Reilly & Main, 2010; Sheikh, Shah, & Akbar, 2018; van Essen, Otten, & Carberry, 2012b) find insignificant or weak pay-performance link along with excessive CEO compensation.

A common feature of much of the literature is that it views CEO compensation as reward for the realized firm performance and examines the relationship of CEO compensation with current and past performance. However, the other view is that board may reward executives for value-maximizing activities with outcomes that have not yet realized, and hence that are unobservable to outside shareholders (see, Balafas & Florackis, 2014; Cooper,

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Gulen, & Rau, 2013; Hayes & Schaefer, 2000). Absence of such rewards against unobserved firm performance may indicate unsolved agency problems not captured by corporate governance measures.

The former perspective believes that a positive relationship between CEO compensation and realized firm performance is ascribed to the fact that realized performance signals the ability of CEO to effectively manage the firm (see, Danker, Darrrough, Huang, & Plehn-Dujowich, 2013). While, latter suggests that efficient compensation packages may motivate executives to exert costly effort to enhance the growth opportunities of their firms, leading to long term value creation to shareholders and reduced shareholder-manager agency problems (see, Balafas & Florackis, 2014).

This study adopts the latter approach and examines whether CEO compensation is related to unobservable future firm performance in Pakistan. Since concentrated ownership and group affiliation is common feature of corporate governance structure in Pakistan therefore the study also examines how concentrated ownership and group affiliation shape the relationship between CEO compensation and unobserved future firm performance. Existing studies (Shah, Javed, & Abbas, 2009; Sheikh et al., 2018) in Pakistan focus on the effect of past and contemporary firm performance on CEO compensation and do not account for differences across concentrated ownership and group affiliation. This study focuses on the effect of CEO compensation on unobserved future firm performance and examines how concentrated ownership and group affiliation can moderate the relationship under examination.

Using data from non-financial companies listed in Pakistan Stock Exchange (PSX), this study finds that CEO compensation does affect future operating performance (accounting returns) but not firm market performance (market returns). Further, split sample analysis reveals that when firm has lower ownership concentration and is affiliated with business groups, excessive CEO compensation has negative association with operating performance. At non-group affiliation and higher ownership concentration, the association between CEO compensation and future operating performance appears to be insignificant. Overall, the results suggest that board of directors in Pakistan reward CEOs only against potential operating performance of the firm and this reward is moderated by interaction of group affiliation and concentrated ownership.

### 1.1. Institutional Context of Pakistan

Pakistan is getting considerable attention of the economists and scholars in Asia due to China-Pakistan

Economic Corridor (CPEC) in which China and other Asian countries are investing billions of dollars. The political leadership of Pakistan calls CPEC a “game changer” that would bring prosperity to a fragile economy. The CPEC will open doors to immense economic opportunities in Pakistan. GDP growth is expected to increase considerably that will have trickle-down effect on everything. Given the potential growth in the economy, corporate sector needs to be bullish to exploit the economic opportunities and increase shareholders’ wealth. In the corporate sector, the boards of directors are responsible to devise such compensation plans for managers that motivate them to take benefits from the growth opportunities and increase shareholders’ wealth. However, the boards of directors in Pakistan are dominated by family members and there is highly concentrated ownership environment. A lot of firms are affiliated with groups. This makes board decisions more complicated. These features of Pakistani corporate governance environment are different from other Asian countries like China, Japan and Korea (Sheikh et al., 2018). In addition to that Legal and political environment is also weak and the overall governance is poor (Rehman, Hasan, Mangla, & Sultana, 2012). Further, there is more foreign influence on governance and corporate environment in Pakistan. Moreover, Pakistani economy is plagued with more corruption than many other Asian countries (Sheikh et al., 2018). Pakistani market is considered to be highly vulnerable to unethical behavior due to weak governance and political system (Mujtaba & Afza, 2011).

The number of steps has been taken by Security and Exchange Commission of Pakistan (SECP) to improve the corporate governance systems in Pakistan, notably, issuance of the Code of corporate governance first in 2002 then revision in 2012. Given the growth prospects of Pakistani economy and evolving corporate governance structure and general ethical behavior in the society, it is important to study whether higher managerial compensation leads to higher future firm performance managers. This study fills this gap by studying the effect of current CEO compensation on future firm performance.

Rest of the paper is organized in the following fashion. Section 2 describes briefly the general hypothesis based on agency theory, Section 3 discusses the methodology, and Section 4 provides the empirical results while conclusion is presented in Section 5.

## 2. Literature Review

The pay-performance literature seems to partially support both optimal contracting and managerial power approaches (see, Bebchuk & Fried, 2003; Chen, Ezzamel, & Cai, 2011;

Devers, Cannella, Reilly, & Yoder, 2007; Frydman & Jenter, 2010; van Essen et al., 2012b). Importantly, pay-performance relationship is largely conditioned to socio-economic and institutional peculiarities prevailing in the economies under examination (Hüttenbrink, Oehmichen, Rapp, & Wolff, 2014; Sun, Zhao, & Yang, 2010; van Essen, Heugens, Otten, & Van Oosterhout, 2012a; van Essen et al., 2012b).

Most of the Asian economies are considered to be emerging. In these countries, firms face heavy government intervention on business activities through taxation, regulation, and state ownership (Fan, Wei, & Xu, 2011). Therefore, executive compensation research in Asia has come up with more complex findings as compared to US and Europe. Firth, Fung, and Rui (2007) find that overall CEO compensation is positively related to firm accounting performance as well as to stock market performance measures in China. Conyon and He (2012) find that association of CEO compensation with firm performance is stronger for accounting performance than market performance in China. However, Kato and Long (2006) report that this association is weak for state owned firms, indicating ineffectiveness of state-owned firms in resolving agency problems. Su, Li, and Li (2010) find significant positive association between executive compensation and return on assets for both SOEs and non-SOEs. Mitsudome, Weintrop, and Hwang (2008) find that CEOs in Japan and US are rewarded for contemporaneous firm performance however, pay for performance relationship is more persistent in Japanese firms. In addition, Mazumder (2017) finds that institutional ownership is negatively while managerial ownership is positively related to the level of executive compensation. Kato, Kim, and Lee (2007) show in Korea that CEO cash compensation is significantly associated with stock performance only and the magnitude of the relationship is quite comparable to Japan and US. However, this pay for performance relationship is mainly driven by non-Chaebol firms.

Besides considering pay as reward for performance, many studies investigate the motivational role of pay including its components. Specifically, these studies examine how CEO compensation is related to unobserved future firm performance. For example, Hayes and Schaefer (2000) find strong evidence suggesting that future performance can be predicted using unexplained variation in current compensation. Further, they find that higher variation in publicly observable performance measure leads to stronger relationship between current compensation and future firm performance. Contrary to that, Kubo (2005) shows no support for the hypothesis of positive relationship between pay-performance sensitivity and firm performance in Japan. Therefore, performance improvements induced by

highly geared incentive pay plans offered by firms are doubtful in Japan. In UK, Balafas and Florackis (2014) show that excessive CEO incentive compensation is inversely related to short-term future stock returns. Adithiyangkul, Alon, and Zhang (2011) address the motivational aspect of perks (non-cash compensation) in China and document that perks are positively related to both current and future firm performance as measured by return on assets, indicating that perks are used to reward the performance as well as to motivate the executives for future profitability. Buck, Liu, and Skovoroda (2008) also confirm in China that executive compensation and firm performance have mutual effects on each other through both reward and motivation.

Option grants are advocated to be an instrument to reduce moral hazard problems and align the mutual interests of agents and principals however, according to rent extraction view, option grants can be used to compensate executives excessively if executives are in control of the pay setting process (see, Bebchuk & Fried, 2003). Consistent with former, Hanlon, Rajgopal, and Shevlin (2003) show that stock option grants to top management team (TMT) positively influence the future firm. Kato, Lemmon, Luo, and Schallheim (2005) show that adoption of stock options, following a regulatory change in 1997, has significant impact on operating performance in Japan. Relatedly, Fich and Shivdasani (2005) show that presence of stock option plans for outside directors have positive influence on market to book ratios. However, Malmendier and Tate (2009) document that both stock and operating performances decline following CEO awards

In Pakistan, Sheikh et al. (2018) find that CEOs are rewarded against past and contemporary firm performance. On the other hand, Shah et al. (2009) could not find any positive association between firm performance and CEO compensation. However, these studies focus on pay as reward for past and contemporary firm performance and do not consider pay against unobserved firm performance and as a motivation to perform in future. Thus, our study is different from existing studies in Pakistan and focuses on the relationship between current excessive CEO compensation and future firm performance.

Under agency theory, if boards compensate CEOs in Pakistan for both observable and unobservable performance measures and unobservable performance measures correlate with future observable performance measures then current compensation that is unexplained by current observable performance measures is likely to correlate with future observable performance measures (see, Balafas & Florackis, 2014; Carter, Li, Marcus, & HassanTehrani, 2016; Cooper et al., 2013; Hayes & Schaefer, 2000). This leads to the deduction that current

CEO compensation can predict future performance, leading to the hypothesis that:

**Hypothesis 1:** CEO compensation has positive effect on future firm performance.

### 3. Data and Methodology

The study focuses on all the non-financial firms listed in PSX for period 2005 to 2012. The financial firms are excluded because they have different accounting and regulatory requirements and structures of valuation ratios and profits. There are total of 399 non-financial firms listed in PSX. Since no database is available in Pakistan that covers CEO compensation and corporate governance variables therefore this data is extracted from hand collected annual reports of the companies. We manage to collect total of 1836 annual reports from 260 firms for at least three consecutive years for each firm. In 328 annual reports, we find that CEO compensation is either zero or it is not reported. Therefore, we eliminate such firms from our dataset. Our final unbalanced panel dataset contains 1508 observations from 225 firms. All the financial data is collected from Balance Sheet Analysis (BSA) published by State Bank of Pakistan (SBP).

#### 3.1. Measurement of Key Variables

##### 3.1.1. CEO Compensation

The literature classifies executive compensation into two broad classes i.e., cash compensation (short-term compensation) and non-cash compensation (long-term compensation) based on nature and/or time-horizon of the award. Cash compensation is the remuneration paid to the executives during the fiscal year. It may include base salary and cash bonuses (see, e.g., Cooper et al., 2013; Core, Holthausen, & Larcker, 1999; Ozkan, 2011) or may include base salary, cash bonuses and other cash benefits (see, e.g., Balafas & Florackis, 2014; Conyon & He, 2012; Ntim, Lindop, Osei, & Thomas, 2013). Other forms are included in non-cash compensation. In Pakistan, CEO are not paid in the form of long term incentive plans, stock options and restricted stocks (Sheikh et al., 2018). Consistent with existing literature, this study uses both measures of CEO compensation i.e., cash compensation and total compensation. However, in Pakistan, both compensations are highly correlated ( $r = 0.97$ , unreported) therefore results of this study are not qualitatively different for these two classes of compensation. To conserve brevity, we report results for total compensation only.

##### 3.1.2. Firm Performance

Operating firm performance is represented by return on assets (ROA) estimated by ratio of income before interest (EBIT) and taxes to total assets (see, e.g., Banghoj, Gabrielsen, Petersen, & Plenborg, 2010; Conyon & He, 2012). Another popular measure of operating performance i.e. earnings per share (EPS) (see, e.g., Chen et al., 2011; Laan et al., 2010) is also calculated for robustness purposes. Market performance is measured as total return to shareholders calculated as current market price share plus dividend for the current year divided by previous year market price (see, e.g., Boschen, Duru, Gordon, & Smith, 2003; Guthrie, Sokolowsky, & Wan, 2012).

#### 3.2. Model

When high CEO compensation is due to the information that CEO effort is greater than implied by current observable firm performance measures alone then one should find future firm performance to be higher than implied by current firm performance alone (Balafas & Florackis, 2014; Hayes & Schaefer, 2000). This can reasonably be tested using following three-step procedure.

1. regress CEO compensation on current performance and take residuals
2. regress future firm performance on current firm performance and take the residuals
3. regress residuals of (2) on residuals of (1)

This is equivalent to regressing future firm performance on current CEO compensation and current firm performance. This way the effects of current firm performance would be net out. Thus, the model would be:

$$\begin{aligned} FirmPerformance_{it+1} &= \alpha + \beta_1 ROA_{it} + \beta_2 TRET_{it} \\ &+ \beta_3 LNTCOMP_{it} + \alpha_i + \omega_t + \varepsilon_{it} \quad (1) \end{aligned}$$

Where  $FirmPerformance_{it+1}$  is one year ahead accounting and market performance (ROA or TRET),  $ROA_t$  is current year return on assets,  $TRET_t$  is current year total return to shareholder (market performance),  $LNTCOMP_t$  is log of current CEO compensation.

Note here that in step 1 above, objective is to measure the degree of information contained in CEO compensation that is not explained by current firm performance. Therefore, two measures of current performance, ROA and total shareholder return, are incorporated in the model. Industry fixed effects and time fixed effects are also incorporated to control for unobserved heterogeneity and macroeconomic shocks.

In addition, corporate governance and firm specific variables also correlate with CEO compensation and firm performance therefore to provide as much explanatory power as possible, most widely used corporate governance and firm specific variables are incorporated. Thus, following model is estimated.

$$\begin{aligned}
 FirmPerformance_{it+1} &= \alpha + \beta_1 ROA_{it} + \beta_2 TRET_{it} \\
 &+ \beta_3 LNTCOMP_{it} + \beta_4 OWNCONS_{it} \\
 &+ \beta_5 FAMOWN_{it} + \beta_6 GROUP_{it} \\
 &+ \beta_7 BDSIZE_{it} + \beta_8 NED_{it} + \beta_9 DUALCEO_{it} \\
 &+ \beta_{10} INSTHOLD_{it} + \beta_{11} FIRMSIZE_{it} \\
 &+ \beta_{12} MTB_{it} + \beta_{13} FIRMRSK_{it} + \alpha_i + \omega_t \\
 &+ \varepsilon_{it} \tag{2}
 \end{aligned}$$

Where  $OWNCONS_t$  is ownership of the largest shareholder (Holderness, 2017; La Porta, Lopez-De-Silanes, & Shleifer, 1999),  $FAMOWN_t$  is an indicator variable taking value 1 if 1) a person or family group holds at least 25% of voting right as measured by percentage of shares owned directly or indirectly. An indirect voting right can be achieved through a trust or holding company, 2) two or more family members sit in the board of directors and zero otherwise,  $GROUP_t$  is an indicator for group affiliated firms,  $BDSIZE_t$  is boards size,  $NED_t$  is ratio of non-executive directors to board size,  $DUALCEO_t$  is and indicator variable taking value 1 if CEO is also chairman board of directors and zero otherwise,  $INSTHOLD_t$  is ratio of shares held by institution to total shares outstanding,  $FIRMSIZE_t$  is log of total assets,  $MTB_t$  is market to book ratio and  $FIRMRSK_t$  is firm risk measured by standard deviation of monthly stock returns for the fiscal year.

To examine the role of concentrated ownership and group affiliation we split our sample into group vs non-group firms and high ownership concentration vs low ownership concentration. We do not use interaction terms in regression model to avoid problem of multicollinearity due to high correlation among interactions terms.

#### 4. Results

Table 1 reports the descriptive statistics of the variables used in the regression model. Average annual total CEO compensation is PKR 9,148,000 with standard deviation of PKR 13,285,000. Mean return on assets is 11.06 percent with standard deviation of 10.81 percent while market return averages at 14.09 percent with standard deviation of 75.84 percent. Market return seems to have more dispersion than

return on assets showing that secondary market in Pakistan is highly volatile.

**Table 1:** Descriptive Statistics

Variables	Mean	Standard Dev.	Minimum	Maximum
Total CEO Compensation (PKR in '000)	9148	13285	121	207381
Return on Assets (%)	11.06	10.81	-28.91	53.18
Market Return (%)	14.09	75.84	-93.14	887.78
Ownership Concentration (%)	33.41	20.40	5.18	94.34
Family Ownership	0.754	0.431	0	1
Group Affiliation	0.622	0.485	0	1
Board Size	8.036	1.565	6	16
Non-Executive Directors Ratio	0.636	0.203	0	1
CEO Duality	0.345	0.476	0	1
Institutional Ownership (%)	12.38	10.72	0	57.20
Firm Size (Log of Assets)	15.140	1.493	11.170	19.670
Firm Risk (%)	15.63	13.78	0	210.30
Market to Book Ratio	1.601	5.127	-32.610	99.240

Table 2 presents empirical results for the relationship between CEO compensation and one year ahead firm operating performance (ROA). In column 1, it appears that CEO compensation positively influences future operating performance as coefficient of compensation is statistically significant. This means that boards of directors also reward CEOs for the operating performance that is not observable to outside shareholders. This finding is consistent with other studies (e.g., Adithipyangkul et al., 2011; Balafas & Florackis, 2014; Hayes & Schaefer, 2000).

Given the Pakistani context of high ownership concentration and group affiliation of the firms, we split our sample into high vs low ownership concentration and group vs non-group affiliated firms. The coefficient of compensation is significant in firms that have high ownership concentration or are not affiliated with any group (see column 3 & 5). However, further analysis shows that within high and low ownership concentration, the behavior of group affiliated and non-group affiliated firms is different. For example, low ownership concentration firms that are not affiliated with any group have positive association between CEO compensation and future operating performance whereas firms that are affiliated with group in low ownership concentration category have negative association (see column 6 & 7). Interestingly, the relationship CEO compensation and future operating performance is again positive where firms are group affiliated and have high ownership concentration (see column 8). This shows that CEO compensation (excess of observable performance) leads to higher future operating performance when firm has



low ownership concentration and is not affiliated with any group or firm has high ownership concentration and is affiliated with a group. There is an indication of expropriation in firms that have low ownership concentration and are affiliated with a group as excess CEO compensation leads to negative future operating performance. Concentrated ownership seems to play monitoring role as high ownership concentration mitigates the negative association between CEO compensation and future firm performance.

Table 3 describes the results for CEO compensation and future market performance. None of columns shows that there is any association between CEO compensation and future market performance of the firm. These results support the finding of Sheikh et al. (2018) in that market performance in Pakistan does not contribute towards CEO compensation.

**Table 2:** CEO compensation and one-year ahead firm operating performance (Return on Assets)

VARIABLES	(1) Full Sample	(2) Low Concentration	(3) High Concentration	(4) Group	(5) Non- Group	(6) Low Cons. & Non-Group	(7) Low Cons. & Group	(8) High Cons. & Non-Group	(9) High Cons. & Group
Compensation	0.007** (0.003)	0.002 (0.004)	0.009** (0.004)	0.002 (0.004)	0.009** (0.004)	0.011* (0.006)	-0.011* (0.006)	0.002 (0.007)	0.011* (0.006)
Return on Assets	0.637*** (0.029)	0.496*** (0.044)	0.715*** (0.032)	0.609*** (0.033)	0.635*** (0.051)	0.430*** (0.068)	0.459*** (0.052)	0.723*** (0.057)	0.669*** (0.041)
Market Return	0.009*** (0.003)	0.016*** (0.005)	0.004 (0.005)	0.004 (0.005)	0.014*** (0.005)	0.020* (0.010)	0.010 (0.007)	0.007 (0.006)	0.002 (0.007)
Ownership Concentration	0.013 (0.014)			0.008 (0.019)	0.017 (0.021)				
Family Ownership	-0.007 (0.007)	-0.009 (0.013)	-0.000 (0.009)	0.005 (0.009)	-0.019 (0.013)	-0.007 (0.018)	-0.003 (0.032)	-0.036 (0.027)	0.006 (0.010)
Group	0.009* (0.005)	0.024*** (0.007)	-0.000 (0.007)						
Board Size	0.002 (0.002)	0.004* (0.002)	0.002 (0.002)	0.004 (0.002)	0.004 (0.004)	0.001 (0.006)	0.009*** (0.003)	0.008** (0.004)	0.000 (0.003)
Non-Executive Directors Ratio	-0.001 (0.011)	-0.012 (0.016)	0.012 (0.017)	-0.005 (0.014)	0.012 (0.019)	0.033 (0.030)	-0.027 (0.021)	-0.005 (0.031)	0.025 (0.025)
CEO Duality	0.001 (0.005)	-0.001 (0.007)	0.005 (0.007)	-0.008 (0.006)	0.019** (0.009)	0.040*** (0.014)	-0.020*** (0.007)	0.018 (0.013)	0.005 (0.010)
Institutional Ownership	-0.031* (0.019)	-0.028 (0.027)	-0.032 (0.027)	-0.021 (0.025)	-0.044 (0.030)	-0.042 (0.046)	-0.020 (0.035)	-0.055 (0.042)	-0.023 (0.040)
Firm Size	-0.002 (0.002)	0.000 (0.003)	-0.005* (0.003)	0.000 (0.003)	-0.005 (0.003)	0.007 (0.005)	0.006 (0.004)	-0.006 (0.006)	-0.003 (0.004)
Firm Risk	-0.064** (0.025)	-0.059 (0.042)	-0.063** (0.031)	-0.067* (0.037)	-0.066* (0.039)	-0.002 (0.072)	-0.070 (0.051)	-0.093** (0.040)	-0.044 (0.054)
Market to Book	0.003*** (0.001)	0.003** (0.001)	0.002** (0.001)	0.003*** (0.001)	0.005* (0.003)	0.004** (0.002)	0.004 (0.006)	0.005 (0.005)	0.003** (0.001)
Observations	1,229	621	608	765	464	218	403	246	362
R-squared	0.620	0.473	0.703	0.567	0.696	0.558	0.449	0.784	0.659

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 3:** CEO compensation and one-year ahead firm market performance (Market Return)

VARIABLES	(1) Full Sample	(2) Low Concentration	(3) High Concentration	(4) Group	(5) Non- Group	(6) Low Cons. & Non-Group	(7) Low Cons. & Group	(8) High Cons. & Non-Group	(9) High Cons. & Group
Compensation	0.023 (0.018)	0.019 (0.030)	0.021 (0.025)	0.006 (0.026)	0.029 (0.028)	0.042 (0.075)	-0.037 (0.057)	-0.016 (0.076)	-0.031 (0.062)
Return on Assets	0.062 (0.151)	-0.274* (0.142)	0.386** (0.170)	0.376* (0.193)	-0.137 (0.144)	-0.477 (0.361)	-0.256 (0.436)	0.449 (0.478)	0.594* (0.303)
Market Return	-0.113*** (0.022)	-0.124*** (0.037)	-0.113*** (0.028)	-0.174*** (0.031)	-0.089** (0.036)	-0.124 (0.080)	-0.135** (0.058)	-0.313** (0.138)	-0.248*** (0.066)
Ownership Concentration	0.107 (0.088)			0.186 (0.123)	0.132 (0.144)				
Family Ownership	0.015 (0.044)	0.018 (0.091)	0.037 (0.057)	0.053 (0.056)	-0.013 (0.087)	-0.024 (0.354)	-0.237 (0.261)	0.426 (0.510)	0.044 (0.073)
Group	0.046 (0.031)	0.019 (0.050)	0.072 (0.046)						
Board Size	0.020** (0.010)	0.041** (0.018)	0.006 (0.013)	0.014 (0.013)	0.040* (0.021)	0.062 (0.058)	0.065** (0.031)	0.100** (0.044)	-0.012 (0.022)
Non-Executive Directors Ratio	-0.128 (0.084)	-0.189 (0.136)	0.000 (0.113)	-0.164 (0.113)	-0.044 (0.161)	0.050 (0.322)	-0.279 (0.243)	0.142 (0.484)	-0.127 (0.238)
CEO Duality	-0.026 (0.032)	-0.014 (0.046)	-0.022 (0.048)	-0.059 (0.041)	0.037 (0.057)	0.309** (0.149)	-0.168** (0.072)	0.192 (0.162)	-0.032 (0.079)
Institutional Ownership	-0.308** (0.126)	-0.184 (0.195)	-0.379** (0.190)	-0.274* (0.159)	-0.240 (0.215)	-0.702 (0.617)	-0.144 (0.335)	-0.670* (0.365)	-0.535 (0.395)
Firm Size	-0.021 (0.013)	-0.013 (0.021)	-0.026 (0.018)	-0.003 (0.017)	-0.040* (0.024)	0.009 (0.056)	0.007 (0.034)	-0.066 (0.070)	0.015 (0.035)
Firm Risk	0.483*** (0.185)	0.691*** (0.255)	0.343 (0.275)	0.447* (0.234)	0.444 (0.300)	0.722 (0.594)	0.866** (0.397)	1.438** (0.587)	0.289 (0.361)
Market to Book	-0.000 (0.002)	0.007 (0.008)	-0.002 (0.002)	0.004 (0.003)	-0.003* (0.002)	0.018* (0.010)	-0.161*** (0.056)	-0.072 (0.047)	-0.013 (0.012)
Observations	1,229	621	608	765	464	218	403	246	362
R-squared	0.257	0.252	0.310	0.269	0.285	0.344	0.257	0.224	0.275

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## 5. Conclusion

We study the relationship between CEO compensation and future firm performance in an economy that has considerable growth prospectus. We use data from non-financial companies listed in PSX and adopt a robust methodological approach. The evidence suggests that excessive CEO compensation leads to higher future operating performance. However, firms' future market returns are not affected by excessive CEO compensation. Further evidence suggests that excessive CEO compensation leads to negative accounting returns when firms have lower ownership concentration and are affiliated with business groups. Nevertheless, when ownership concentration is high, and firm is affiliated with a group, the relations between CEO compensation and future accounting returns remains positive. Non-group affiliated firms show

positive association between CEO compensation and firm operating performance when ownership concentration is low. At non-group affiliation and higher ownership concentration, there was no significant association between CEO compensation and future accounting returns.

Overall, our study suggests that although, generally, there is a positive relationship between excessive CEO compensation and future operating performance however this relationship is moderated by interaction of ownership structure and group affiliation of the firms. Future research may be directed to examine how ownership rights (control and cash flow rights) can shape the relationship between CEO compensation and future returns. In view of considerable growth prospects of the Pakistani market our study has important implications for domestic as well as foreign stakeholders.

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