DO EXECUTIVES GET MORE PAY PRIOR TO DETERIORATIONS OF FIRM PERFORMANCE?

BY

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DISSERTATION

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ABSTRACT

I examine whether executives obtain more direct compensation from their companies in anticipation of deteriorations of firm performance. Using compensation data from S&P 1500 firms, I find that top managers receive more direct compensation in anticipation of the next year's poor performance. The negative association between compensation and future performance is most significant in firm-years in which insiders sell large amounts of stock, or in which top managers exercise large amounts of options, both of which are signals of top managers' foreknowledge about future poor performance. Moreover, this phenomenon is more significant in firms with more entrenched CEOs. I also find intensive scrutiny from active shareholders effectively mitigates such behavior. This finding supports the managerial rent-extraction, rather than efficient contracting, explanation for the negative association between current pay and future performance. Consequently, such rent-seeking behavior is followed by even poorer long-term operating and stock performance in the subsequent five years.

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Chapter 1

INTRODUCTION

The last two decades have witnessed the rapid growth of executive compensation in the United States. These large compensation packages for top executives attract criticism from the media and investors, especially during economic downturns or when firms' performances are disappointing. For example, the Warner Music Group paid its CEO a $3 million bonus in 2008 while the company posted a loss of $53 million and saw its stock fall by 25%. Similarly, Texas Instruments' CEO received a bonus of $1.5 million in the year when the company's share value declined by 54% and net income dropped by 28% (*Wall Street Journal* 2009). To protect shareholder wealth, the recently enacted Dodd-Frank Act urges more rigorous regulations to prohibit compensation arrangements that could lead to material financial losses to the companies.

While the mismatch between pay and performance has attracted public attention, such rent-extraction can happen even before decreases of firm performance become known if top executives possess foreknowledge about firms' future prospects. For example, Albert Dunlap, the former CEO of Sunbeam Corp., renegotiated his contract with Sunbeam and received $2 million in annual salary and $75 million of options, immediately before the crash of Sunbeam's performance in 1998.[1] The overly generous and sharply increased compensation package led investors to wonder whether Mr. Dunlap

[1] Mr. Dunlap's original compensation package included a $1 million salary, $16.6 million worth of stock options and $12.5 million of restricted stock. His salary doubled from $1 million to $2 million in the new contract. The value of stock options he received from the renegotiation was also much more valuable than those he originally received in 1996.

knew Sunbeam's fortunes were slipping when he renegotiated his new contract with the company (*Wall Street Journal* 1998).

When top managers foresee deteriorations in future firm performance, they also anticipate decreases in their personal wealth due to large equity holdings. Such private foreknowledge, therefore, motivates these managers to acquire greater compensation to offset their future personal losses. As it is often difficult for shareholders to relate pay and performance across periods, managers can more easily camouflage such rent-extracting behaviors from the scrutiny of both shareholders and regulators. In this study, I empirically examine whether top managers acquire more compensation when they anticipate deteriorations of firm performance. Using compensation data from S&P 1500 firms, I find a negative correlation between future firm performance and current unexplained compensation when there is imminent bad news about future performance.[2] The negative correlation between pay and future performance suggests that CEOs receive more compensation when they anticipate greater decreases in firm performance, and consequently greater decreases in their future personal wealth. In addition, I find that this phenomenon is more pronounced when insiders sell large amounts of stock or when top management teams exercise large amounts of options, both of which are signals of top managers' foreknowledge about future poor performance (Ke et al. 2003; Huddart and Lang 2003). This finding provides further evidence that the abnormal compensation arrangements are driven by managers' expectations of forthcoming poor performance and their incentive to offset future losses.

[2] Unexplained compensation in this study is defined as the portion of compensation that could not be explained by current and past firm performance.

Although this phenomenon implies top executives extract rents from shareholders, an alternative explanation from an efficient contracting perspective is that the extra pay shields risk-averse managers from outside shocks, and thus helps retain managerial talent. To disentangle the efficient contracting and managerial rent-seeking explanations, I investigate the prevalence of such behavior in firms with different levels of CEO power, and those with various intensities of monitoring by shareholders. First, I find the abnormal compensation arrangement is more prevalent in firms where CEOs own larger amount of stocks and in firms where CEOs also serve as the chairmen of the boards, both of which are proxies of CEOs' power in their firms. These results suggest that top managers may use their power to influence the compensation committee to receive more pay when they anticipate deterioration of performance in the future. Second, I use the presence of block shareholders (i.e., those who own more than 5% of shares) and the size of shares held by block shareholders as proxies for shareholder scrutiny of the management. My analysis shows that the presence of block shareholders and their shareholdings significantly mitigates the negative correlation between pay and future performance. Therefore, my findings are more consistent with managerial rent-extraction, rather than an efficient contracting explanation, for the observed phenomenon.

Last, I explore the long-term performance implications of this phenomenon and find that firms in which CEOs receive excess compensation preceding poor performance continue to experience worse operational and stock performances compared to their peers, in the subsequent five years. One plausible explanation is that the excess pay represents more severe agency problems, which ultimately lead to poorer performance in the long-run. Another potential explanation is that these CEOs expect poor performance to persist

longer, and hence have stronger incentives to acquire more compensation to offset future losses. Both explanations suggest the phenomenon documented in this study predicts poor firm performance in the long-run.

This study contributes to the executive compensation literature and practice in three ways. First, prior research finds that managers sell their stock holdings or exercise options when they anticipate a crash of firm performance in the future. This is the first study that demonstrates that, besides these channels, managers also acquire more remuneration directly from shareholders to offset anticipated losses in the future. Such behavior represents direct wealth transfer from shareholders to managers, which excessively reduces shareholder wealth during economic downturns. Second, this paper sheds new light on our understanding of the relation between pay and performance. Most prior studies examine whether and how current compensation correlates with future performance. For example, Hanlon at al. (2003) and Ittner et al. (2003) both show a positive association between equity grants and performance, while Malmendier and Tate (2009) shows a negative correlation for superstar CEOs. This paper provides an alternative view that top executives themselves influence the compensation process when they possess information about a firms' future performance.

Third, this paper has important implications for both practitioners and regulators. Congress recently enacted the Dodd-Frank Act to reform the financial markets and corporate governance in the United States. The Act compels the SEC and other regulators to set more rigorous regulations on the disclosure of executive/employee compensation that will allow shareholders and regulators to limit excessive compensation, fees or benefits, and to prohibit compensation arrangements that could lead to material financial

loss to the company. While regulators and investors have focused their attention on the contemporaneous mismatch of pay and performance, this study suggests that top managers' rent-extraction can be inter-temporal, due to their information advantage over shareholders. Investors and regulators should thus pay attention not only to the mismatch of pay and performance in the same period, but also to abnormally large compensation packages arranged prior to deteriorations of firm performance. Although such rent extraction can only be determined *ex post*, abnormally large compensation arrangements could raise important "red flags" for investors, who should then closely scrutinize managers' behavior and monitor subsequent firm performance.

The remainder of this paper is organized as follows. Section II provides a review of related literature. Section III describes the research design and variable measurements. Section IV presents major empirical results, as well as a discussion of alternative explanations. Section V presents sensitivity analyses. The paper concludes in Section VI.

Chapter 2

RELATED LITERATURE

2.1 Executives' Private Information and Rent Extraction

Information asymmetry between principals and agents represents one of the most significant issues in modern corporations. Agency problems arise when agents possess private information about the firms they manage. Prior studies have documented various channels through which managers use their informational advantage to extract rent or transfer wealth from shareholders. One strand of literature examines insider trading, in which insiders use their private information to trade and beat the market. For example, Ke et al. (2003) document that insiders use their foreknowledge of future earnings to sell stocks before the "break" of a string of consecutive earnings increases. Specifically, they find that insiders' stock sales increase three to nine quarters prior to a break of consecutive increases in quarterly earnings, but return to normal in the two quarters immediately preceding the break to avoid legal jeopardy. Similarly, Huddart et al. (2007) find insiders trade most heavily on their foreknowledge of information in forthcoming 10-K or 10-Q filings, but avoid trading before quarterly earnings announcements to reduce the risk of legal jeopardy. Besides accounting information, insiders may also benefit from private information regarding a firm's significant strategic movements or operational activities. For example, the releases of ground-breaking new products or patents are vital to companies in the information technology, biochemistry and pharmaceutical industries. These events are usually followed by huge fluctuations in stock price because they convey crucial information about firms' future strategic

advantages and operating performance. Ahuja et al. (2005), therefore, find that managers buy stocks well before the filing of important patents. Lastly, Frankel and Li (2004) find that insider trading activities and their profitability are conditioned on their firms' information environment. Specifically, they find that more analysts following a company and more informativeness of financial statements reduce information asymmetry between insiders and outsiders, thereby reducing the profitability and frequency of insider trading activities.

Besides insider trading, another strand of literature examines whether and how managers use their private information to time the market in granting or exercising options. For example, Yermack (1997) finds stock price increases shortly after executives' option awards, which suggests that managers influence boards to award options right before the release of favorable news. While Yermack's (1997) finding is more applicable to firms without fixed award schedules, Aboody and Kasznik (2000) focus on those with fixed option award schedules and find that managers opportunistically manage the timing of voluntary disclosure to maximize their option value. Besides the timing of option grants, some studies examine whether insiders use their private information to time the exercise of stock options. Huddart and Lang (2003) analyze the exercise decision of over 50,000 employees from seven companies. They find the timing of option exercises of both top executives and junior employees can be used to predict future abnormal stock return. The finding suggests that these employees possess and benefit from private information about the movement of their companies' stock prices. Bartov and Mohanram (2004) examine accounting performance before and after large option exercise by top managers, and find abnormally positive earnings in the pre-exercise period, followed by

disappointing earnings performance in the post-exercise period. They also find that the disappointing earnings performance in post-exercise periods represents a reversal of earnings inflation in the pre-exercise period. The findings, taken together, suggest that managers manage earnings upward prior to option exercises.

These studies suggest that when top managers possess foreknowledge about their firms' forthcoming poor performance, they will sell their stock holdings (Ke et al. 2003) or exercise their stock options (Bartov and Mohanram 2004) before the crash of stock price. Since nowadays most executives' wealth is closely tied to their firms' value due to extensive use of equity compensation, selling stocks and exercising options represent two channels through which managers can reduce the loss of their personal wealth. However, the risk of legal jeopardy and active investors/directors' scrutiny restrict the amount and frequency of insider trading and option exercises. Moreover, many compensation contracts mandate that executives maintain a certain level of equity holdings, further limiting the degree to which executives can shield themselves from losses via the two channels discussed above. In contrast to these prior studies, this paper contributes to the literature by examining a third channel through which managers extract rent—by influencing the compensation packages when they anticipate deteriorations of firm performance in the near future.

2.2 Managerial Power Hypothesis on Executive Compensation

Over the last two decades, executive compensation has become a popular topic in economics, finance and accounting literature. The majority of research utilizes a principal-agent approach and presumes that the observed contracts are optimal outcomes of arms-length transactions and negotiations between shareholders and managers. The optimal contracting approach has generated fruitful findings that help us understand the complex relationship between executive incentive, compensation, and firm performance. This approach, however, leaves some unanswered questions regarding compensation practices, urging researchers to seek alternative theories or models to fill the gap in the literature.

A small yet growing body of literature tries to answer these puzzles by assuming a different hypothesis; namely, that top managers have significant influence over the boards to determine their own compensations (Bebchuk et al. 2002; Bebchuk and Fried 2004). This line of literature complements the traditional optimal contracting perspective of compensation, and explains compensation arrangements that serve top managers' private interests. Therefore, Weisbach (2007) suggests that developing models of optimal contracting with management rent-seeking incentives would contribute to the existing literature. The fundamental assumptions underlying the managerial power perspective include the following: (1) top executives prefer more rather than less compensation, and (2) they are able to influence both the level and structure of their compensation packages. However, managerial power theory does not imply that top executives can increase their compensation without limit. An important constraint comes from investors' "outrage" over the executives' pay packages. If managers cannot appropriately camouflage or

justify their excess pay, upset investors might tighten the compensation policy, increase scrutiny of the management, or even replace the managers. Thus, the extent to which top managers can extract rent is constrained by the potential outrage costs their rent-seeking behavior would cause (Bebchuk et al. 2002).

Although Murphy (2002) argues the managerial power argument is "sufficiently vague as to be irrefutable," it does provide reasonable explanations for some phenomena that conflict with predictions from optimal contracting models. For example, Faulkender and Yang (2010) investigate the composition of compensation peer groups and find that firms tend to select highly paid peers to justify their CEOs' compensation. They also find this effect more significant in firms where CEOs have greater influence over the boards (i.e., CEOs who serve as chairmen and those with longer tenure) and where directors are busy serving on multiple boards. Similarly, Gong et al. (2011) examine the selection of relative performance measure (RPE) peer groups to determine compensation. They find that firms tend to select peers that are expected to perform poorly, based on analysts' target price forecasts, suggesting a self-serving bias in peer group selection to inflate firms' relative performance and managers' pay checks. Both studies show executives have significant influence on the selection of compensation peers to increase and justify their compensation packages.

Since top executives have the power to influence the compensation determination process, it is likely that they might try to acquire more compensation to offset losses in personal wealth when they foresee forthcoming bad news with respect to firm performance. First, managers can more easily camouflage and justify their generous pay packages prior to the deterioration of firm performance than when investors are already

aware of poor firm performance. Second, when top managers foresee sharp decreases in performance, they also expect a higher probability of management turnover and a shortened employment horizon (Matějka et al. 2009). The shortened work horizon encourages executives to care less about investors' potential outrage regarding their abnormal compensation arrangements, since they are likely to be replaced due to poor firm performance.

In sum, top executives have incentives to acquire more direct compensation from their companies when they anticipate poor, future firm performance. They also have opportunities to do so due to their ability to influence the compensation determination process, the informational advantage they possess over investors, and a shorter expected employment horizon. Such behavior, however, has not been previously examined. This paper thus fills the gap in the literature by empirically examining this managerial rent-extracting behavior prior to deteriorations in firm performance.

Chapter 3

RESEARCH DESIGN

3.1 Sample Selection

My sample starts from the intersection of ExecuComp, Compustat and CRSP during the period between 1993 and 2005.[3][4] I obtain CEO compensation data from ExecuComp, which includes companies from the S&P 1500 indices starting from 1992. Stock return and accounting variables are drawn from CRSP and Compustat, respectively. Merging the three databases yields a sample of 21,312 firm-years. A total of 14,419 firm-year observations have non-missing values for all variables required in my major regression model. Furthermore, I exclude observations of CEOs that did not stay in their positions for the whole fiscal year. The final sample contains 13,479 observations.

3.2 Empirical Model and Variable Measurement

The ideal method of testing the hypothesis is to examine the correlation between CEOs' private information about their firm's future prospects and CEOs' compensation unexplainable by current and past performance. However, CEOs' foreknowledge about future prospects is not observable to outsiders or researchers. Following prior studies (Ke et al. 2003; Bartov and Mohanram 2004; Fahlenbrach et al. 2010), I use firms' actual

[3] Although the compensation data in ExecuComp is available starting from 1992, my sample period starts from 1993 due to the use of change model in my analysis.

[4] The regulation on compensation information reporting has significantly changed since 2006. For example, executives' stock and option awards are required to be evaluated and reported at grant-date fair value starting from 2006. Because the compensation information in these two periods is not comparable, I only include firm-year observations before the regulation change in 2006. But my major findings remain the same even I expand the sample period to 2008.

future performance as a proxy of executives' foreknowledge about future performance.[5] Similar to the model used by Hayes and Schaefer (2000), my analysis comprises the following three steps:

(1) regressing current compensation on current and past performance,

(2) regressing future performance on current performance, and

(3) regressing the residuals from step (1) on the residuals from step (2).

The residuals from step (1) represent the part of compensation that could not be explained by current and past firm performance. This part of compensation might be determined by top executives and boards of directors' private information about firms' current performance that is not observable to outsiders, or future prospects. The residuals from step (2) represent the part of future performance that cannot be explained by current and past performance. In step (3), the correlation between unexplained compensation and unexpected future performance suggests information about future firm performance has been incorporated into executives' compensation determination processes.

The three-step procedure is equivalent to regressing current compensation on future and current performance, as shown in model (1). The one-year-ahead abnormal stock return is the proxy of future firm performance.[6]

[5] There is a growing body of literature that uses future performance as a proxy of managers or directors' private information about firms' future prospects (e.g., Fahlenbrach et al. 2010).
[6] In a sensitivity analysis I use one-year-ahead accounting return as an alternative measure of future performance. The major findings hold using this alternative variable.

$$\Delta\, TotalComp_{\,t} = \alpha_0 + \beta_1 Abn\_RET_{\,t+1} + \beta_2 D_{\,t+1} + \beta_3\, Abn\_RET_{\,t+1} * D_{\,t+1} + \beta_4\, \Delta\, ROA_{\,t}$$
$$+ \beta_5\, \Delta\, ROA_{\,t+1,t+3} + \beta_6\, RET_{\,t} + \beta_7\, RET_{\,t+1,t+3} + \beta_8\, Size_{\,t} + \beta_9\, ME/BE_{\,t}$$
$$+ \beta_{10}\, Leverage_{\,t} + \beta_{11}\, TotalComp_{\,t-1} + \varepsilon_{\,t} \qquad (1)$$

In model (1), the dependent variable $\Delta\, TotalComp_{\,t}$ is the change in total direct compensation from t-1 to t, scaled by base salary in t-1.[7] I use the total direct compensation defined in ExecuComp as the measure of CEO's compensation, including salary, cash bonus, long-term incentive plan, value of restricted stock and option grants, and other pays. Abn_RET_t is the abnormal stock return in fiscal year t+1, estimated from Fama and French's (1993) three factor model.[8] D_{t+1} is a dummy variable that equals 1 if Abn_RET_{t+1} is negative, and 0 otherwise. I include current and past accounting and stock performances to control the performance-based compensation. RET_t is the twelve-month compounded stock return in fiscal year t. I include the change of a firm's return on asset from t-1 to t ($\Delta\, ROA_{\,t}$) as another variable for current firm performance. I also control the average accounting and stock performance in the past three years ($\Delta\, ROA_{\,t-1,t-3}$ and $RET_{\,t-1,t-3}$, respectively).[9]

To control for variation in firm characteristics, I include firm size, market to book ratio, and leverage as control variables in the model. $Size_{\,t}$ is the natural log of total assets at the beginning of year t. $ME/BE_{\,t}$ is the market value of equity divided by book value of

[7] The salary deflator provides an intuitive measure of the change in compensation, which allows me to interpret results more meaningfully. The measure is also consistent with prior studies, such as Baber et al. (1996) and Matsunaga and Park (2001).

[8] I use abnormal stock return because it better represents idiosyncratic factors that are not anticipated by the market, but might be foreseen by top managers. In the sensitivity analyses, I use raw return and market- or industry- adjusted return as alternative measures of managers' private information. The major findings hold.

[9] Leone et al. (2006) document an asymmetric relation between compensation and stock return. In a robustness test, I include the current bad news dummy D_t and its interaction with current stock return RET_t to control the impact of potential correlation between current and future bad news. The results remain unchanged.

equity, measured at the beginning of year t. $Leverage_t$ is the ratio of total liability to total assets, measured at the beginning of year t. Last, I include lagged compensation, $TotalComp_{t-1}$, to control for the potential mean reversion of firm performance (and thus compensation). The model is estimated with both industry and year fixed effects. To reduce potential heteroskedasticity problems, I estimate standard errors with clusters of firm and year.

This paper differs from Hayes and Schaefer (2000) in that I hypothesize an asymmetric relation between current unexplained compensation and future performance. As illustrated in Figure 1, when there is good news in t+1, current unexplained compensation is positively correlated with future performance due to unobservable non-financial measures used implicitly in the compensation determination (Hayes and Schaefer 2000). In contrast, when managers have foreknowledge about future poor performance, top managers may exert their influence over board members to obtain more compensation. Therefore, I expect to find a positive β_1, a negative β_3 and a negative $(\beta_1 + \beta_3)$ in model (1).[10]

[10] In Figure 1, β_1 is the slope of the dotted line. β_3 is the difference in slopes of the dotted line and the solid line. $(\beta_1 + \beta_3)$ represents the slope of the solid line.

Chapter 4

EMPIRICAL FINDINGS

Table 1 presents the descriptive statistics for major variables in my analysis. All continuous variables are winsorized at the top and bottom 1% to reduce the impact of extreme observations. The average change in total compensation ($\Delta\ TotalComp_t$) is 0.40, indicating CEOs in my sample on average receive an annual increase of total compensation as 40% of their base salary. This finding is consistent with the public's common criticism of top managers' ever-rising paychecks in recent years. The median (0.27) is lower than the mean, suggesting a right-skewed distribution of $\Delta\ TotalComp_t$. It also implies that paychecks increase even more quickly for a small group of CEOs. The mean of D_{t+1} is 0.52, indicating that roughly 52% of the observations have negative stock returns in the subsequent year.

4.1 Do CEOs receive more compensation prior to poor performance?

Table 2 presents the regression results of Model (1). Column (1) in Table 2 shows the pooled regression result. The coefficient on Abn_RET_{t+1} is positive and significant (β_1=1.22, t=5.42, p<0.01), which supports Hayes and Schaefer's (2000) finding that unexplained compensation is positively correlated with future performance because of the use of non-financial measures that lead future financial performance. Consistent with my expectation, I find a negative and significant coefficient on $Abn\_RET_{t+1} * D_{t+1}$ (β_3= -3.37, t=-7.47, p<0.01), suggesting an asymmetric correlation between unexplained compensation and future performance: the slope is significantly lower when there is bad

news, compared to when there is good news in the next period. Furthermore, $\beta_1+\beta_3$ equals -2.15 and is significantly negative (F=31.85, p<0.01). The negative $\beta_1+\beta_3$ implies that when there is forthcoming bad news, CEOs get more unexplained compensation the worse the performance in the next year.

Column (2) reports the results from Fama and MacBeth's (1973) two-step procedure.[11] The Fama-MacBeth procedure is a common approach to control for potential cross-sectional and serial correlation in residuals in accounting and finance research. Results from the Fama-MacBeth procedure are consistent with findings from the pooled regression model. Column (3) reports the result from a model that controls year and industry fixed effects, with standard errors clustered by firm.[12] The findings hold using the fixed effect model.

The point estimates imply that the CEO with median salary at a firm with median market capitalization receives approximately $114,100 in additional compensation when he/she anticipates the firm value will decrease by 10% in the next year, or 74 cents of additional pay per $1,000 decrease in shareholder wealth in the next year. The result is economically significant in terms of shaping top executives' incentive. In particular, Garvey and Milbourn (2006) document that an average executive loses 1.15 dollar (60 cents) for every $1,000 loss in shareholder wealth due to firm-specific (industry-level or market-wide) factors. My finding shows the additional compensation CEOs receive in the current year significantly offsets these top managers' losses due to poor firm performance

[11] In the first step, cross-sectional regressions are used to obtain estimates of the parameters, year-by-year. In the second step, the time series of these estimates are used to calculate final estimates for parameters and standard errors with Newey-West correction for autocorrelation to compute t-statistics.

[12] I control firm clusters in the model because compensation policies vary significantly across firms. An alternative model that uses two-way clustering (i.e., firm and year clusters) gives similar results.

in the next year.[13] Although the amount of additional compensation is relatively small compared to shareholders' losses, it significantly alters the relation between executives' pay and firm performance, and thus may affect executives' decisions and behaviors.

In sum, using these three different approaches, I find consistent evidence that supports my expectation. First, I find a significantly asymmetric relation between current unexplained change in compensation and future performance. Second, when there is bad news in the future, the correlation between unexplained change in compensation and future performance is negative and significant. Such negative correlation suggests that some CEOs acquire more compensation when they anticipate low future firm performance.

4.2 Managers' Private Foreknowledge about Future Performance

To validate the link between top executives' foreknowledge about future prospects and their compensation arrangements, I examine whether the rent-extraction is more pronounced in subsamples where there is clear evidence that managers possess foreknowledge about firms' future performance. Prior studies have documented that executives are likely to sell their stock holdings (Ke et al. 2003) or exercise options (Huddart and Lang 2003) when they anticipate sharp decreases in firm performance. Therefore, selling a large amount of stock or exercising a large amount of options

[13] Garvey and Milbourn's estimation only includes direct compensation (i.e., excludes changes in managers' equity holding value), and systematically underestimates the pay-performance sensitivity compared to that documented in Jensen and Murphy (1990), Aggarwal and Samwick (1999) and Milbourn (2003). However, Garvey and Milbourn's finding is more comparable to mine because my study focuses on the determination of direct compensation as well.

immediately before poor firm performance signal that these managers likely anticipate the deterioration of firm performance. Thus, unusual compensation arrangements should be more pronounced in the subsamples with large amounts of insider selling or option exercise prior to bad performance, if the large compensation packages are driven by managers' foreknowledge about their companies.

Table 3 Panel A presents descriptive statistics for insider trading activities and the amount of managers' option exercise. Panel B presents the association between CEOs' abnormal compensation and insider trading activities. In columns (1) and (2), I split the sample according to CEOs' trading activities in year t. Column (1) shows the results for firm-years with CEO net selling, while column (2) for those with CEO net purchasing. According to prior literature, managers tend to sell (buy) large amounts of stock when they are pessimistic (optimistic) about their firms' future prospects. Thus, if the rent-extracting behavior is driven by managers' foreknowledge about the future, it should be more pronounced in firm-years when CEOs sell their stocks, but less significant or insignificant for those firm-years with CEO net purchasing. Consistent with my expectation, I find that the asymmetric correlation between current unexplained compensation and future performance is most significant in firm-years with CEO net selling (β_3= -5.84, t= -3.08), but insignificant for those with CEO net purchasing. The negative correlation between unexplained compensation and future poor performance is also very significant for those with CEO net selling ($\beta_1+\beta_3$= -5.64, F= 6.95, p<0.01), but insignificant for those with CEO net purchasing of stocks. Columns (3) to (4) report the results when I split the sample by non-CEO officer insiders' stock trading activities in year t. The results are similar: the negative association between pay and future

performance is only significant in firm-years in which other officers sell large amount of stocks.

Table 3 Panel C shows the results for firm-years with different amounts of options exercised by the top management team in year t. Similar to the insider trading story, large amounts of option exercise immediately before poor performance can be a signal that these managers anticipate decreases in performance. Consistent with my expectation, I find the phenomenon most significant in firm-years with managers exercising large amounts or large portions of their exercisable options on hand. Taken together, the finding implies the abnormal compensation arrangements are driven by managers who anticipate forthcoming poor performance.

4.3 Managerial Power versus Efficient Contracts

Two competing arguments may explain the negative correlation between pay and future performance in top executives' compensation. The first argument comes from managerial power theory (Bebchuk et al. 2002) that suggests top managers take advantage of their private information over shareholders and exploit rents from their firms. Such agency conflict is magnified when agents foresee decreases in their wealth in near future and thus have stronger incentive to obtain more compensation to smooth future consumption. However, an alternative perspective from efficient contracting perspective may also explain this phenomenon. The boards may give CEOs extra pay to insulate them from the impact of uncontrollable economy-wide or industry-wide shocks.

Reducing such unnecessary risk exposure helps firms retain valuable managerial talents (Bizjak et al. 2008).

One way to disentangle the two competing explanations is to examine how managers' power and corporate governance quality affect the prevalence of the observed phenomenon. If managerial rent-extraction leads to the observed pattern, I expect the phenomenon is less prevalent in firms with weaker managerial power, or in firms with stronger corporate governance, and vice versa. In contrast, if the phenomenon is consistent with the efficient contracting explanation, I may not observe significant differences across firms with various intensity of corporate governance or CEO power.

4.3.1 CEO Entrenchment

Table 4 presents the results for firms with different degrees of CEO entrenchment. In particular, I use two variables to measure CEOs' power over boards of directors. First, I estimate the value of each CEO's stock holdings at the beginning of each fiscal year. I then split the sample into three subsets by the value of CEO's stock holdings, year by year. Panel A presents the descriptive statistics of CEOs' stock holdings. Column (1), (2) and (3) in Panel B present the results for subsets of firms in which CEOs hold large (top 25%), medium (middle 50%) and small (bottom 25%) amounts of company stock, respectively. Result shows that β_3 is significant in subgroups of CEOs with large and medium, but not small, amounts of stock holdings. Moreover, $\beta_1+\beta_3$ is significantly negative only in subgroups with large and medium CEO stock holdings ($\beta_1+\beta_3$ equals -3.82 and -2.46, respectively, both with $p<0.01$), but insignificant for CEOs who own

relatively fewer stocks. The magnitude also decreases monotonically from the subgroup with the largest stock holding (-3.82) to the subgroup with the lowest stock holding (0.31).

CEO-Chairman duality is another commonly used measure of CEO entrenchment. Prior literature documents CEOs who also serve as the chairmen of their companies have dominating power over the boards of directors (Rechner and Dalton 1991). Following this line of research, I split my sample by CEO-Chairman duality to examine how the phenomenon differs between the two groups. The result shows that the asymmetric correlation is only significant for dual CEOs (β_3=-0.37, t=-2.19, p<0.05). Moreover, the magnitude of the negative association between CEO compensation and future bad performance is greater for dual CEOs ($\beta_1+\beta_3$=-2.17, F=17.10, p<0.01), compared to non-dual CEOs ($\beta_1+\beta_3$=-1.32, F=2.94, p<0.1).

Taken together, the results suggest that CEOs who hold more stocks of their companies or who serve as the chairmen have greater power to acquire more compensation when they anticipate forthcoming bad performance. This finding is consistent with the managerial power hypothesis that top executives use their power to opportunistically extract more compensation from shareholders (Bebchuk et al. 2002).

4.3.2 Shareholders' Monitoring Strength

While corporate governance has various aspects, shareholders' monitoring strength is the most relevant one in this study, because it directly associates with the potential "outrage cost" managers need to consider. Prior studies document that large-block shareholders (i.e., shareholders who own at least 5% of shares) play a significant

role in corporate governance because such "blockholders" have a stronger incentive and more expertise to scrutinize top management's decisions and compensation packages (Gilson 1990; Barclay and Holderness 1991). Therefore, the presence of block shareholders and the size of their holdings are often used as proxies of governance strength. Following this line of research, I use the number of block shareholders and the percentage of shares held by blockholders as alternative measures of shareholders' monitoring strength.[14]

Table 5 Panel A presents descriptive statistics for blockholder variables. Panel B presents the results for subgroups with different levels of shareholder monitoring intensity. First, I split the sample by the number of large-block shareholders (see columns (1), (2) and (3) for results). Consistent with my expectation, the negative correlation between pay and future performance is most significant in firms with the fewest (bottom 25%) block shareholders ($\beta_1+\beta_3$= -4.50, F=6.56, p<0.01), but is insignificant in firms with the largest (top 25%) amounts of block shareholders. This finding suggests that large-block shareholders monitor top managers' compensation packages more closely, thereby mitigating managers' rent-extracting behavior. Second, I split the sample by the percentage of shares held by block shareholders (see columns (4), (5) and (6) for results). The results are consistent with my previous findings: the phenomenon is most prevalent and significant in firms with the lowest percentage of shares being held by block shareholders, but is insignificant in firms with the largest portion of shares being held by blockholders.

[14] I only include outside blockholders as a better measure of shareholders' monitoring strength (i.e., block holding insiders are excluded). The data is generously provided by the authors of Dlugosz et al. (2006).

Using the data of large-block shareholders, I find consistent evidence that corporate governance strength effectively prevents top managers from receiving more compensation prior to poor firm performance. This finding also suggests the observed phenomenon is more likely driven by top executives' rent-extracting incentive, and represents wealth transfer from shareholders to the management.

4.4 The Implication for long-term performance

In this section, I explore the relation between CEOs' unexplained compensation and firms' long-term operational and stock performance. First, if CEOs anticipate performance will recover shortly after the shock, they would not have strong incentive to get more compensation. As such, getting more compensation prior to deteriorations of performance implies that these CEOs anticipate the poor performance will persist. Second, the phenomenon may represent agency problems in these firms, which ultimately lead to worse performance in the long-run. These two arguments both suggest firms in which CEOs receive excess compensation before performance shocks have poorer long term performance.

Table 6 presents the five-year operational and stock performance following the year CEOs get abnormal compensation. I form four portfolios in year t according to CEO's unexplained compensation in each firm-year. Specifically, I first run the following time series autoregressive model for each firm, and use the residual ε_t as the proxy of CEO's unexplained compensation in year t.

$$\Delta\ TotalComp_{\ t} = \alpha_0 + \beta_1\ \Delta\ ROA_{\ t} + \beta_2\ RET_{\ t} + \beta_3\ TotalComp_{\ t-1} + \beta_4\ \Delta TotalComp_{\ t-1} + \varepsilon_{\ t} \quad (2)$$

In model (2), $\Delta\ ROA_t$ and RET_t capture the compensation determined by current performance. The inclusion of $TotalComp_{\ t-1}$ and $\Delta\ TotalComp_{\ t-1}$ captures the mean-reversing nature of firm performance and the momentum of compensation changes, respectively. Thus, the residual represents any changes in compensation that could not be explained by firm performance, mean-reversion or momentum, and therefore may capture discretionary adjustment in compensation. Second, I sort firm-years by unexplained compensation (i.e., the $\varepsilon_{\ t}$ from model (4)) year by year, and form four different portfolios: positive, negative, top quintile and bottom quintile. In particular, the "Positive" portfolio contains firm-years in which CEOs receive positive unexplained compensation in year t, while CEOs in the "Negative" portfolio receive zero or negative abnormal compensation in t. Similarly, the "Top (Bottom) Quintile" portfolio contains firm-years in which CEOs' unexplained compensations rank in the top (bottom) quintile in year t. I further restrict samples to include only firms with negative stock returns in t+1, so that the portfolios represents the scenarios in which CEOs do or do not get abnormal compensation before poor performance.

Panel A of Table 6 presents the raw returns, from year t to year t+5, for each portfolio formed in year t. In general, firms in which CEOs get positive unexplained compensation outperform in year t, but underperform in subsequent years, compared to those in which CEOs do not receive excess compensation. The comparison between the top and bottom quintiles exhibits similar but even more striking patterns. I then use CAPM and size- BE/ME matched portfolios to control the impact of market performance

and other risk factors. Panel B presents the abnormal return estimated from a CAPM model. After controlling market performance and systematic risk, the pattern is similar to that in Panel A. In Panel C, I follow Fama and French (1993) to form 25 size-BE/ME portfolios and estimate abnormal return for each firm-year by adjusting the return of corresponding size and BE/ME matched portfolio.[15] Panel C shows similar results: the stocks of firms in which CEOs get excess compensation prior to poor performance outperform in year t, but underperform in the following few years. In addition to stock performance, I compare the long-term operational performance in Panel D. Using industry-adjusted ROA as the measure of operational performance, I find very similar patterns to those for stock performance. Firms that give their CEOs positive unexplained compensation in year t have significantly higher ROA in year t and t+1. These firms, however, have significantly lower ROA from year t+1 to t+3 compared to their peers.

Figure 2 presents the trends of cumulative abnormal return (adjusted for size and book-to-market ratio matched portfolio return) for the top versus bottom portfolio. It is striking that after the performance shocks in t+1, firms in which CEOs get large unexplained compensation experience very stagnant recovery in the subsequent five years. In contrast, firms in which CEOs do not get excess compensation recover quickly after the shocks.

[15] Following Fama and French (1993), I independently sort and form reference portfolios for each size and BE/ME category once a year in July. Specifically, the sort on size is based on market value of common equity of each firm at the end of June, which yields five size portfolios. The sort on BE/ME also yields five equal-size portfolios. The book value comes from the latest fiscal year ending in the prior calendar year. The market value is from the previous calendar year's end. The two independent sorts together yield 25 reference portfolios. I then calculate equally-weighted average stock return for each portfolio in each month as the expected return.

As discussed earlier, the findings in this section can be interpreted in two different ways. First, managers who anticipate persistent poor performance will have stronger incentive to obtain more remuneration to offset their future losses. If the poor performance is transitory, managers have weak incentive to get more compensation because transitory shocks do not seriously affect their future income or wealth. The second interpretation comes from the agency theory. The observed phenomenon might represent top managers' rent-extracting behaviors and thus more severe agency problems, thereby leading to poorer long-term performance.

Chapter 5

SENSITIVITY ANALYSES

Thus far, I use future abnormal stock returns as the proxy of managers' private information about their firms' future prospects. However, it is plausible that investors consider top executives' abnormally large compensation to be a signal of the company's exceptional future prospects, thereby leading to market overreaction in the current period and subsequent market adjustment to fundamental levels in the next period. Moreover, stock return might be a noisy performance measure because it could be influenced by factors that are irrelevant to the operation of a company. Therefore, as a robustness test, I use accounting performance as an alternative measure of CEO's private information.

First, I replace future stock performance in Model (1) by accounting performance, which is independent from market reaction. In particular, I use ΔROA_{t+1} to replace RET_{t+1} in Model (1) and use ΔROA_{t+1} to determine D_{t+1} (i.e., D_{t+1} equals 1 if ΔROA_{t+1} is negative, and 0 otherwise). Using accounting measures does not significantly alter my finding; I still find a negative correlation between current excess compensation and future performance, conditioned on bad news in the future. This robustness test provides evidence that the major finding in this study is not driven by market overreaction and subsequent price adjustment.

However, the public may possess some information about firms' future performance as well. According to the managerial-power hypothesis, managers could not take advantage of information that is already known by investors. In the second robustness test, I use analysts' forecast on future operating performance to separate out

publicly versus privately known information[16]. Specifically, I use analysts' one-year-ahead forecast as a proxy of public information about a firm's future performance. On the other hand, analysts' forecast error is the portion of change in performance that is not anticipated by the analysts or the public. Specifically, I use analysts' consensus (median) forecasts on a firm's earnings per share in year t+1, measured at the fourth month of fiscal year t+1, as the best estimation of a firm's future performance using publicly available information[17]. The analyst forecast data is collected from the I/B/E/S database. Analysts' expectation of the change in performance (AF_{t+1}) is defined as the consensus forecast on earnings per share in year t+1 minus the actual earnings per share in year t, scaled by the stock price at the end of fiscal year t. AFE_{t+1} is measured as the actual earnings per share in year t+1 minus the consensus (median) analysts' forecast made three months after fiscal year end of t, and scaled by the stock price at fiscal year-end of t.

$$\Delta TotalComp_t = \alpha_0 + \beta_1 AF_{t+1} + \beta_2 D_{AF,t+1} + \beta_3 AF_{t+1} * D_{AF,t+1} + \beta_4 AFE_{t+1} + \beta_5 D_{AFE,t+1} + \beta_6 AFE_{t+1} * D_{AFE,t+1} + \beta_7 \Delta ROA_t + \beta_8 \Delta ROA_{t-1,t-3} + \beta_9 RET_t + \beta_{10} RET_{t-1,t-3} + \beta_{11} Size_t + \beta_{12} ME/BE_t + \beta_{13} Leverage_t + \beta_{14} TotalComp_{t-1} + \varepsilon_t \qquad (3)$$

Table 7 presents the results for model (3). In column (1), I substitute the change in future performance in the original model with analysts' "anticipated" change in future performance, AF_{t+1}. The result shows that current compensation is not significantly correlated with analysts' expected change in future performance. In contrast, in column

[16] The underlying assumption is: analysts are sophisticated investors, and should incorporate most publicly available information in their earnings forecasts.

[17] I choose the fourth month of year t+1 because most executives' compensation packages have been determined and disclosed in proxy statements and 10Ks by this time. Thus, analysts' forecast at this time can be an appropriate proxy of public's expectation on a firm's future performance when executives' current compensation is determined.

(2) I substitute the change in future performance by AFE_{t+1}, the part of performance change that is not anticipated by analysts. I find managers' current compensation is significantly and negatively associated with AFE_{t+1} when there is forthcoming bad news ($\beta_4 + \beta_6 = -1.24$, $F=6.92$, $p<0.1$). Column (3) includes both analysts' expected and unexpected changes in performance, and the result holds. This finding is consistent with the theoretical argument that top executives are concerned about public outrage when they extract rents from their companies. It implies that managers' rent-seeking behavior relies on their information advantage over investors, suggesting that more transparent disclosure of managers' private information about firms' future prospects would reduce such rent-extracting behavior.

Chapter 6

CONCLUDING REMARKS

Top executives have incentive to acquire more compensation when they anticipate deteriorations of firm performance in the future. Compared to insider trading, first, this approach is less subjected to legal jeopardy. Second, the determination of executive compensation usually involves unverifiable "soft" information, such as subjective (Baker et al. 1994; Gibbs et al. 2004), non-financial (Ittner and Larcker 1998; Hayes and Schaefer 2000), or individual performance measures (Bushman et al. 1996), leaving plenty of space for manipulation (see Bebchuk and Fried 2004 for a more detailed discussion). Therefore, it is difficult for investors to detect or prevent such behavior *ex ante* (i.e., before decreases of performance), and it is easy for managers to justify the excess pay when investigated by investors or regulators.

Using U.S. compensation data, I find empirical evidence supporting the hypothesis that CEOs get more compensation immediately prior to poor performance. Interestingly, I find the abnormal compensation arrangement is most prevalent when insiders sell large amounts of stock or when the management teams exercise large amounts of options, both of which being signals that executives possess foreknowledge about forthcoming poor firm performance.

Consistent with managers' rent-seeking explanation, the CEO's power and the quality of corporate governance significantly influences the prevalence of this behavior. Specifically, the abnormal compensation arrangement is most prevalent in firms where top managers have dominating power over the boards. Moreover, I find the phenomenon

more significant in firms that receive less intensive monitoring, but insignificant in those intensively scrutinized by shareholders. Last, I find the phenomenon is associated with poorer long-term stock and operating performance.

To my knowledge, this is the first study that examines whether managers get more compensation in response to their foreknowledge about future performance. Prior studies have documented that managers possess foreknowledge about firms' future prospects, and sell their stock holdings (Ke et al. 2003) or exercise options (Huddart and Lang 2003) when they anticipate decreases in firm performance. My study adds to this line of literature by documenting another channel through which managers could benefit from their private information. These rent-extracting behaviors represent severe agency problems because they directly transfer wealth from shareholders to managers. Such wealth transfer further impedes shareholders' benefit, especially during economic or industry downturns.

This study also adds to the literature on executive compensation. When examining pay-performance relations, prior studies mainly focus on how current and past performance determines compensation, and how compensation drives future performance. This study sheds new light on this literature by showing a more complex relation, in which information about future performance could be incorporated in the compensation determination process.

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TABLES

TABLE 1
Descriptive Statistics of Major Variables

This table presents the descriptive statistics of major variables used in this study. The full sample consists of 13,480 firm-year observations.

Variable	N	Mean	S. D.	Min	Q1	Median	Q3	Max
Δ TotalComp $_t$	13,479	0.40	6.75	-31.66	-0.70	0.27	1.66	29.55
TotalComp $_{t-1}$	13,479	6.16	8.15	1.00	2.20	3.68	6.53	56.01
Abn_RET $_{t+1}$	13,479	0.02	0.39	-0.77	-0.22	-0.02	0.18	1.57
D $_{t+1}$	13,479	0.52	0.50	0.00	0.00	1.00	1.00	1.00
RET $_t$	13,479	0.17	0.47	-0.80	-0.11	0.11	0.37	2.14
RET $_{t-1, t-3}$	13,479	0.23	0.32	-0.40	0.04	0.16	0.34	1.62
ΔROA $_t$	13,479	-2.85E-3	0.08	-0.36	-0.02	6.11E-4	0.02	0.31
ΔROA $_{t-1, t-3}$	13,479	-2.77E-3	0.04	-0.16	-0.01	-4.43E-4	0.01	0.16
Size $_t$	13,479	7.43	1.72	4.10	6.16	7.26	8.57	12.15
ME/BE $_t$	13,479	3.13	3.11	-4.26	1.55	2.27	3.62	20.42
Leverage $_t$	13,479	0.56	0.23	0.09	0.40	0.57	0.71	1.08

Variable Definitions:

TotalComp: TDC1 in ExecuComp, contains salary, bonus, long-term incentive plan, total value of restricted stock granted, total value of option granted (using Black-Scholes), and all other pay

Δ TotalComp $_t$ = (TotalComp $_t$- TotalComp $_{t-1}$)/Salary $_{t-1}$

Abn_RET $_{t+1}$: Abnormal stock return in year t+1, estimated by the Fama-French three factor model.

D $_{t+1}$: A dummy variable that equals 1 if Abn_RET $_{t+1}$ is less than 0, and 0 otherwise.

RET $_t$: Monthly compounded stock return in fiscal year t

RET $_{t-1, t-3}$: Average annual (monthly compounded) return from t-3 to t-1.

Δ ROA $_t$: ROA $_t$ - ROA $_{t-1}$, ROA is measured as income before extraordinary items divided by total asset at the beginning of year t.

ΔROA $_{t-1, t-3}$: Average change of ROA from t-3 to t-1.

Size $_t$: Natural log of total asset at the beginning of year t

ME/BE $_t$: Market value of equity divided by book value of equity, measured at the beginning of year t

Leverage $_t$: Total liability divided by total asset, measured at the beginning of year t

TABLE 2
Regression of Change in Total Direct Compensation on Future Performance

This table shows the result of regressing change in total direct compensation on future performance, while controlling current and past performance. The sample includes 13,480 firm-year observations spanning from 1993 to 2005. Column (1) presents the result of the pooled regression model. Column (2) presents the result from Fama-MacBeth's year-by-year regression procedure, with Newey-West correction for autocorrelation. Column (3) presents the result of the industry- and year-fixed effect model, with standard errors clustered by firm. Please refer to Table 1 for variable definitions. ***, **, * statistically distinct from 0 at the 1%, 5% and 10% level (two-tailed). t statistics are reported in parentheses.

$$\Delta\, TotalComp_t = \alpha_0 + \beta_1 Abn\_RET_{t+1} + \beta_2 D_{t+1} + \beta_3 Abn\_RET_{t+1} * D_{t+1} + \beta_4 \Delta\, ROA_t + \beta_5 \Delta\, ROA_{t-1,t-3} + \beta_6 RET_t + \beta_7 RET_{t-1,t-3} + \beta_8 Size_t + \beta_9 ME/BE_t + \beta_{10} Leverage_t + \beta_{11} TotalComp_{t-1} + \varepsilon_t$$

			Pooled Regression (1)	Fama-MacBeth Regression (2)	Fixed Effect Model (3)
Intercept	α_0		-3.77 ***	-3.06 ***	-6.66 ***
			(-13.25)	(-4.44)	(-10.60)
Abn_RET $_{t+1}$	β_1	+	1.22 ***	0.72 **	0.72 ***
			(5.42)	(2.23)	(2.70)
D $_{t+1}$	β_2		-0.31 **	-0.42 **	-0.35 **
			(-2.00)	(-2.71)	(-2.56)
Abn_RET $_{t+1}$ * D $_{t+1}$	β_3	-	-3.37 ***	-2.76 **	-2.62 ***
			(-7.47)	(-2.66)	(-5.07)
Δ ROA $_t$	β_4	+	0.22	0.71	0.02
			(0.30)	(0.83)	(0.02)
Δ ROA $_{t-1, t-3}$	β_5	+	2.08	1.74	1.78
			(1.40)	(1.23)	(0.84)
RET $_t$	β_6	+	2.22 ***	2.13 ***	2.23 ***
			(19.47)	(14.30)	(11.13)
RET $_{t-1, t-3}$	β_7	+	2.02 ***	1.94 ***	1.91 ***
			(10.97)	(5.61)	(7.78)
Size $_t$	β_8		0.79 ***	0.72 ***	0.84 ***
			(19.66)	(6.60)	(14.05)
ME/BE $_t$	β_9		0.21 ***	0.13 ***	0.20 ***
			(11.80)	(3.52)	(5.43)
Leverage $_t$	β_{10}		-1.92 ***	-1.58 ***	-1.67 ***
			(-6.65)	(-6.23)	(-4.11)
TotalComp $_{t-1}$	β_{11}	-	-0.39 ***	-0.41 ***	-0.42 ***
			(-57.21)	(-10.47)	(-15.51)
Year and Industry Fixed Effect			No	No	Yes
Firm Clusters			No	No	Yes
$\beta_1 + \beta_3$ *(F-statistic)*		-	-2.15 ***		-1.90 ***
			(31.85)		(19.63)
$\beta_1 + \beta_3$ *(t-statistic)*		-		-2.04 ***	
				(-2.52)	
N			13,479	13,479	13,479
Adj. R-Square			0.2148	0.2396	0.2325

TABLE 3
Regression of Change in Total Direct Compensation on Future Performance- Insider Trading and Option Exercise

This table presents the regression results for subgroups with different levels of insider trading activities and option exercise. Panel A presents the summary statistics for insider trading and option exercise. In Panel B, I split the sample by insider trading activities. Column (1) and (2) in Panel B present results for subgroups with CEOs net selling and net purchasing, respectively. Similarly, column (3) and (4) in Panel B present results for subgroups with net selling and net purchasing trading activities by other non-CEO insider officers, respectively. In Panel C, I split the sample according to the amount (column (1) to (3)), and the percentage (column (4) to (6)) of option exercised by the management team in fiscal year t. Please refer to Table 1 for variable definitions. ***, **, * statistically distinct from 0 at the 1%, 5% and 10% level (two-tailed). t statistics are reported in parentheses. Standard errors are clustered by firm and year.

$$\Delta\, TotalComp_{\,t} = \alpha_0 + \beta_1 Abn\_RET_{\,t+1} + \beta_2 D_{\,t+1} + \beta_3\, Abn\_RET_{\,t+1} * D_{\,t+1} + \beta_4 \Delta\, ROA_{\,t} + \beta_5 \Delta\, ROA_{\,t-1,t-3} + \beta_6 RET_{\,t} + \beta_7 RET_{\,t-1,t-3} + \beta_8 Size_{\,t} + \beta_9 ME/BE_{\,t} + \beta_{10} Leverage_{\,t} + \beta_{11} TotalComp_{\,t-1} + \varepsilon_{\,t}$$

Panel A: Descriptive Statistics for Insider Trading and Option Exercise

Variable	N	Mean	S. D.	Min	Q1	Median	Q3	Max
CEO's Net Selling	3,613	716,263	72.22E5	0	41,550	126,622	360,000	38.42E7
CEO's Net Purchase	1,102	84,182	451,046	0	2,200	10,000	30,000	75.00E5
Other Officers' Net Selling	9,415	894,081	91.40E5	0	30,310	116,613	379,240	52.05E7
Other Officers' Net Purchase	1,560	883,66	628,751	0	1640	6518	25,005	17.07E6
Amount of Option Exercised	13,480	42.00	292.43	0	0	7.06	32.45	30,000
% of Option Exercised	12,947	0.14	0.19	0	0	0.06	0.19	1.00

TABLE 3 (cont.)

Panel B: Regression Results for Firm-Years with Different Amount of Insider Trading Activities

			CEO's Transactions		*Other Officers' Transactions*	
			Net Sell ***(1)***	***Net Purchase*** ***(2)***	***Net Sell*** ***(3)***	***Net Purchase*** ***(4)***
Intercept	α_0		-8.48 *** (-5.48)	-7.48 *** (-4.69)	-6.83 *** (-7.52)	-3.48 ** (-2.56)
Abn_RET $_{t+1}$	β_1	+	1.23 * (1.94)	0.99 (1.35)	1.05 *** (2.83)	0.23 (0.42)
D $_{t+1}$	β_2		-0.42 (-1.28)	0.05 (0.10)	-0.37 ** (-2.11)	-0.19 (-0.57)
Abn_RET $_{t+1}$ * D $_{t+1}$	β_3	-	-4.48 *** (-3.65)	-1.35 (-0.95)	-3.61 *** (-5.37)	-0.96 (-0.92)
Δ ROA $_t$	β_4	+	2.76 (1.04)	-4.50 * (-1.96)	-0.23 (-0.14)	0.97 (0.63)
Δ ROA $_{t-1, t-3}$	β_5	+	0.45 (0.09)	1.43 (0.26)	0.66 (0.22)	1.99 (0.57)
RET $_t$	β_6	+	2.82 *** (6.55)	1.90 *** (4.42)	2.40 *** (9.15)	1.13 *** (2.99)
RET $_{t-1, t-3}$	β_7	+	2.27 *** (4.54)	0.66 (0.92)	2.13 *** (6.71)	0.42 (0.91)
Size $_t$	β_8		0.99 *** (7.91)	0.82 *** (4.64)	0.89 *** (11.80)	0.50 *** (3.58)
ME/BE $_t$	β_9		0.23 *** (3.46)	0.18 * (1.66)	0.21 *** (4.61)	0.16 ** (2.37)
Leverage $_t$	β_{10}		-1.58 * (-1.88)	-1.61 (-1.35)	-1.48 *** (-2.77)	-1.47 (-1.61)
TotalComp $_{t-1}$	β_{11}	-	-0.37 *** (-8.38)	-0.48 *** (-6.61)	-0.41 *** (-12.78)	-0.46 *** (-6.58)
Year and Industry Fixed Effects			Yes	Yes	Yes	Yes
Firm Clusters			Yes	Yes	Yes	Yes
$\beta_1 + \beta_3$ *(F-statistic)*		-	-3.25 *** (10.21)	-0.36 (0.10)	-2.56 *** (21.60)	-0.73 (0.74)
N			3,613	1,099	9,414	1,545
Adj. R-Square			0.1892	0.3629	0.2182	0.3587

TABLE 3 (cont.)

Panel C: Regression Results for Firm-Years with Different Amount of Option Exercised

			Amount of Option Exercised			% of Option Exercised		
			Large *(1)*	*Medium* *(2)*	*Small* *(3)*	*Large* *(4)*	*Medium* *(5)*	*Small* *(6)*
Intercept	α_0		-9.15 *** (-6.54)	-3.98 *** (-5.01)	-4.89 *** (-4.80)	-8.48 *** (-6.70)	-5.86 *** (-7.56)	-4.89 *** (-4.80)
Abn_RET $_{t+1}$	β_1	+	1.51 * (1.87)	0.74 ** (2.18)	-0.14 (-0.43)	1.49 ** (2.17)	0.93 ** (2.13)	-0.14 (-0.43)
D $_{t+1}$	β_2		-0.99 *** (-2.57)	-0.07 (-0.44)	-0.21 (-0.83)	-0.61 * (-1.79)	-0.31 (-1.47)	-0.21 (-0.83)
Abn_RET $_{t+1}$ * D $_{t+1}$	β_3	-	-5.43 *** (-3.39)	-2.22 *** (-3.34)	-0.51 (-0.65)	-4.55 *** (-3.31)	-3.08 *** (-3.86)	-0.51 (-0.65)
Δ ROA $_t$	β_4	+	0.78 (0.25)	0.47 (0.35)	-1.74 (-1.56)	0.62 (0.23)	0.37 (0.21)	-1.74 (-1.56)
Δ ROA $_{t-1, t-3}$	β_5	+	0.93 (0.17)	0.68 (0.25)	2.86 (1.23)	3.03 (0.63)	-0.97 (-0.27)	2.86 (1.23)
RET $_t$	β_6	+	3.02 *** (6.45)	1.24 *** (6.25)	1.25 *** (5.46)	2.80 *** (6.96)	1.89 *** (6.34)	1.25 *** (5.46)
RET $_{t-1, t-3}$	β_7	+	2.30 *** (3.52)	1.20 *** (3.71)	0.52 * (1.69)	2.17 *** (3.65)	1.73 *** (4.52)	0.52 * (1.69)
Size $_t$	β_8		0.98 *** (6.63)	0.66 *** (9.99)	0.58 *** (6.10)	0.81 *** (6.42)	0.95 *** (11.88)	0.58 *** (6.10)
ME/BE $_t$	β_9		0.26 *** (3.36)	0.12 *** (3.19)	0.07 (1.60)	0.20 *** (2.93)	0.23 *** (4.62)	0.07 (1.60)
Leverage $_t$	β_{10}		-1.70 (-1.48)	-1.15 *** (-2.63)	-0.21 (-0.33)	-0.10 (-0.11)	-3.01 *** (-5.21)	-0.21 (-0.33)
TotalComp $_{t-1}$	β_{11}	-	-0.39 *** (-9.84)	-0.49 *** (-13.69)	-0.47 *** (-8.23)	-0.31 *** (-5.84)	-0.47 *** (-14.65)	-0.47 *** (-8.23)
Year and Industry Fixed Effects			Yes	Yes	Yes	Yes	Yes	Yes
Firm Clusters			Yes	Yes	Yes	Yes	Yes	Yes
$\beta_1 + \beta_3$ *(F-statistic)*		-	-3.92 *** (8.60)	-1.48 *** (7.69)	-0.65 (0.88)	-3.06 *** (7.47)	-2.15 *** (10.17)	-0.65 (0.88)
N			3,406	6,201	3,872	3,279	3,872	3,872
Adj. R-Square			0.1987	0.2958	0.3539	0.1619	0.2666	0.3539

TABLE 4
Regression of Change in Total Direct Compensation on Future Performance- Subgroups by CEO's Power

This table presents the regression results for subgroups with different levels of CEO power. Panel A presents the summary statistics for CEOs' stock holdings and CEO-Chairman duality. Stock holdings are measured as the value of CEO's stock at the end of year t-1. In Panel B, column (1), (2) and (3) present results for subgroups in which CEOs hold large (top 25%), medium (middle 50%) and small (bottom 25%) amount of stocks. Column (4) and (5) present the result for dual-CEOs (CEOs who are also chairmen) and non-dual CEOs. Please refer to Table 1 for other variable definitions. ***, **, * statistically distinct from 0 at the 1%, 5% and 10% level (two-tailed). t statistics are reported in parentheses. Standard errors are clustered by firm and year.

$$\Delta\, TotalComp_{\,t} = \alpha_0 + \beta_1 RET_{\,t+1} + \beta_2 D_{\,t+1} + \beta_3\, RET_{\,t+1} * D_{\,t+1} + \beta_4 \Delta\, ROA_{\,t} + \beta_5 \Delta\, ROA_{\,t-1,t-3} + \beta_6 RET_{\,t} + \beta_7 RET_{\,t-1,t-3} + \beta_8 Size_{\,t} + \beta_9 ME/BE_{\,t} + \beta_{10} Leverage_{\,t} + \beta_{11}\, TotalComp_{\,t-1} + \varepsilon_{\,t}$$

Panel A: Descriptive Statistics for CEO's Stock Holding

Variable	N	Mean	S. D.	Min	Q1	Median	Q3	Max
Stock Holding	12,982	63,821	213,459	0	2,298	8,614	30,088	17.01E5
CEO-Chairman Duality	13,479	0.71	0.46	0	0	1	1	1

TABLE 4 (cont.)

Panel B: Regression Results for Firm-Years with Different CEO Power

			CEO Stock Holding			*CEO-Chairman Duality*	
			***Large* (1)**	***Medium* (2)**	***Small* (3)**	***Dual CEOs* (4)**	***Non-dual CEOs* (5)**
Intercept	α_0		-8.79 *** (-6.79)	-6.51 *** (-9.17)	-0.89 (-0.87)	-6.68 *** (-9.04)	-5.04 *** (-4.93)
Abn_RET $_{t+1}$	β_1	+	1.71 ** (2.130	0.53 (1.52)	0.05 (0.15)	0.87 *** (2.60)	0.36 (0.85)
D $_{t+1}$	β_2		-0.61 (-1.57)	-0.46 *** (-2.69)	-0.03 (-0.15)	-0.37 ** (-2.19)	-0.34 (-1.43)
Abn_RET $_{t+1}$ * D $_{t+1}$	β_3	-	-5.53 *** (-3.59)	-2.99 *** (-4.48)	0.26 (0.39)	-3.04 *** (-4.70)	-1.68 * (-1.89)
Δ ROA $_t$	β_4	+	-1.16 (-0.40)	1.74 (1.18)	1.01 (0.86)	1.31 (0.98)	-1.87 (-0.96)
Δ ROA $_{t-1, t-3}$	β_5	+	-1.57 (-0.22)	3.01 (1.08)	4.74 * (1.86)	3.90 (1.41)	-0.67 (-0.20)
RET $_t$	β_6	+	3.09 *** (6.52)	1.54 *** (6.57)	1.44 *** (6.14)	2.29 *** (9.52)	2.02 *** (5.94)
RET $_{t-1, t-3}$	β_7	+	2.80 *** (4.52)	1.83 *** (5.11)	0.99 *** (3.55)	1.88 *** (5.86)	1.85 *** (4.96)
Size $_t$	β_8		0.85 *** (5.97)	0.84 *** (10.99)	0.51 *** (4.87)	0.77 *** (11.36)	1.03 *** (8.08)
ME/BE $_t$	β_9		0.10 (1.62)	0.25 *** (5.27)	0.16 *** (3.07)	0.19 *** (4.89)	0.24 *** (2.85)
Leverage $_t$	β_{10}		-0.15 (-0.18)	-2.91 *** (-5.36)	-1.89 *** (-3.24)	-1.45 *** (-3.43)	-2.27 *** (-2.74)
TotalComp $_{t-1}$	β_{11}	-	-0.30 *** (-8.03)	-0.58 *** (-18.62)	-0.57 *** (-12.81)	-0.40 *** (-13.95)	-0.48 *** (-8.55)
Year and Industry Fixed Effects			Yes	Yes	Yes	Yes	Yes
Firm Clusters			Yes	Yes	Yes	Yes	Yes
$\beta_1 + \beta_3$ *(F-statistic)*		-	-3.82 *** (9.25)	-2.46 *** (19.05)	0.31 (0.39)	-2.17 *** (17.10)	-1.32 * (2.94)
N			3,317	6,497	3,167	9,557	3,922
Adj. R-Square			0.1580	0.3583	0.4605	0.2194	0.3014

TABLE 5
Regression of Change in Total Direct Compensation on Future Performance- Subgroups by Corporate Governance Strength

This table presents the regression results for subgroups with different levels of corporate governance strength. Panel A shows the summary statistics of block shareholder variables. In Panel B, I use the presence of large-block shareholders as the proxy of shareholders' monitoring strength. Column (1), (2) and (3) in Panel B present results for subgroups with large (top 25%), medium (middle 50%) and small (top 25%) amount of block shareholders. Similarly, column (4), (5) and (6) in Panel B present results for subgroups with large (top 25%), medium (middle 50%) and small (top 25%) percentage of shares held by block shareholders. Please refer to Table 1 for variable definitions. ***, **, * statistically distinct from 0 at the 1%, 5% and 10% level (two-tailed). t statistics are reported in parentheses. Standard errors are clustered by firm and year.

$$\Delta\, TotalComp_{\,t} = \alpha_0 + \beta_1 RET_{\,t+1} + \beta_2 D_{\,t+1} + \beta_3\, RET_{\,t+1} * D_{\,t+1} + \beta_4 \Delta\, ROA_{\,t} + \beta_5 \Delta\, ROA_{\,t-1,t-3} + \beta_6 RET_{\,t} + \beta_7 RET_{\,t-1,t-3} + \beta_8 Size_{\,t} + \beta_9 ME/BE_{\,t} + \beta_{10} Leverage_{\,t} + \beta_{11} TotalComp_{\,t-1} + \varepsilon_{\,t}$$

Panel A: Descriptive Statistics for Governance Index and Block Shareholders

Variable	N	Mean	S. D.	Min	Q1	Median	Q3	Max
# of Block Shareholders	5,050	2.25	1.59	0	1	2	3	11
Shares Owned by Block Shareholders (%)	5,050	21.50	16.35	0	8.38	19.50	31.40	99.72

TABLE 5 (cont.)

Panel B: Block Holding Shareholders

			Number of Block Shareholders			Shares Owned by Block Shareholders		
			Large	***Medium***	***Small***	***Large***	***Medium***	***Small***
			(1)	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***
Intercept	α_0		-4.69 ***	-6.57 ***	-6.14 **	-4.66 ***	-6.83 **	-3.63
			(-3.14)	(-4.23)	(-2.53)	(-3.45)	(-2.04)	(-1.39)
Abn_RET $_{t+1}$	β_1	+	0.58	1.44 **	1.48	0.38	1.20 **	2.65 *
			(0.96)	(2.13)	(1.28)	(0.62)	(2.02)	(1.70)
D $_{t+1}$	β_2		0.47	-0.61	-0.88	-0.35	-0.53	-0.50
			(1.04)	(-1.43)	(-1.47)	(-0.75)	(-1.41)	(-0.79)
Abn_RET $_{t+1}$ * D $_{t+1}$	β_3	-	0.01	-5.24 ***	-5.98 ***	-0.62	-4.89 ***	-7.27 ***
			(0.01)	(-3.74)	(-2.72)	(-0.51)	(-3.47)	(-3.00)
Δ ROA $_t$	β_4	+	0.24	1.59	1.41	-1.43	3.97	-1.70
			(0.07)	(0.59)	(0.24)	(-0.52)	(1.43)	(-0.24)
Δ ROA $_{t-1, t-3}$	β_5	+	13.42 **	-1.24	-12.04	7.84	0.00	-9.87
			(2.07)	(-0.18)	(-0.60)	(1.31)	(0.00)	(-0.42)
RET $_t$	β_6	+	1.49 ***	2.42 ***	2.96 ***	1.36 ***	2.99 ***	2.06 **
			(3.65)	(5.86)	(3.48)	(3.19)	(6.32)	(2.39)
RET $_{t-1, t-3}$	β_7	+	2.78 ***	3.07 ***	4.93 ***	1.70 **	4.70 ***	3.48 ***
			(2.67)	(3.71)	(3.72)	(2.02)	(5.01)	(2.60)
Size $_t$	β_8		0.55 ***	0.87 ***	1.03 ***	0.52 **	0.80 ***	1.13 ***
			(2.62)	(5.56)	(4.63)	(2.52)	(5.30)	(4.72)
ME/BE $_t$	β_9		0.13 *	0.22 **	0.34 **	0.13 *	0.30 ***	2.94 *
			(1.68)	(2.39)	(2.30)	(1.64)	(3.55)	(1.71)
Leverage $_t$	β_{10}		0.18	-0.96	-4.49	0.95	-1.76	-2.39
			(0.12)	(-0.91)	(-1.41)	(0.79)	(-1.60)	(-0.64)
TotalComp $_{t-1}$	β_{11}	-	-0.58 ***	-0.40 ***	-0.42 ***	-0.55 ***	-0.46 ***	-0.36 ***
			(-5.56)	(-6.40)	(-6.10)	(-6.24)	(-7.18)	(-4.39)
Year and Industry Fixed Effects			Yes	Yes	Yes	Yes	Yes	Yes
Firm Clusters			Yes	Yes	Yes	Yes	Yes	Yes
$\beta_1 + \beta_3$ *(F-Value)*			0.59	-3.80 ***	-4.50***	-0.24	-3.69 ***	-4.62 **
			(0.34)	(10.24)	(6.56)	(0.06)	(9.58)	(6.14)
N			1,105	2,275	1,328	1,163	2,355	1,190
Adj. R-Square			0.3358	0.2240	0.2434	0.3175	0.2675	0.2187

Table 6
Long-term Stock and Accounting Performance after CEOs Get Abnormal Compensation

This table presents the comparison of long-term stock and accounting performance between firms in which CEOs do or do not get excess (unexplained) compensation prior to poor performance. Unexplained compensation is determined by the following firm-specific time-series AR(1) model. $\Delta\ TotalComp_{\ t} = \alpha_0 + \beta_1\ \Delta\ ROA_{\ t} + \beta_2\ RET_{\ t} + \beta_3\ TotalComp_{\ t-1} + \beta_4\ \Delta TotalComp_{\ t-1} + \varepsilon_{\ t}$

The "Positive" column reports forward-looking performance for firm-year observations with positive unexplained compensation in year t. In contrast, "Negative" column reports forward-looking performance for those with negative unexplained compensation in year t. Similarly, "Top (Bottom) Quintile" column contains those with unexplained compensation ranked in the top (bottom) quintile in year t. Panel A reports the comparison of annual raw return. Panel B reports the comparison of abnormal return from a CAPM model. Panel C presents the comparison of abnormal return computed by subtracting the size and book-to-market ratio matched portfolio return from a firm's raw return. Following Fama and French (1993), I independently sort and form reference portfolios for each size and BE/ME category once a year in July. Specifically, the sort on size is based on market value of common equity of each firm at the end of June, which yields five size portfolios. The sort on BE/ME also yields five equal-size portfolios. The book value comes from the latest fiscal year ending in the prior calendar year. The market value is from the previous calendar year end. The two independent sorts together yield 25 reference portfolios. I then calculate equally-weighted average stock return for each portfolio in each month as the expected return. Lastly, Panel D presents the comparison of industry-adjusted ROA. Industry-adjusted ROA is calculated by subtracting the mean ROA of firms with the same 2-digit SIC code from a firm's ROA. ***, **, * statistically distinct from 0 at the 1%, 5% and 10% level (two-tailed).

Panel A: Comparison of Annual Raw Returns between Subgroups formed by Unexplained Compensation

	Positive	Negative	Difference (t-statistic)	Top Quintile	Bottom Quintile	Difference (t-statistic)
t	0.1667	0.1581	0.0086 (0.78)	0.1931	0.1431	0.05*** (2.81)
t+1	-0.2789	-0.2556	-0.0233 *** (-4.60)	-0.2915	-0.2636	-0.0279 *** (-3.38)
t+2	0.1347	0.1864	-0.0517 *** (-3.70)	0.1350	0.2028	-0.0678 *** (-2.99)
t+3	0.1257	0.1646	-0.0389 *** (-2.59)	0.1269	0.2038	-0.0769 *** (-3.10)
t+4	0.1002	0.1067	-0.0065 (-0.43)	0.0874	0.1448	-0.0574 ** (-2.32)
t+5	0.1391	0.1462	-0.0071 (-0.44)	0.1465	0.1583	-0.0118 (-0.45)

Table 6 (cont.)

Panel B: Comparison of Abnormal Returns (Using CAPM) between Subgroups formed by Unexplained Compensation

	Positive	Negative	Difference (t-statistic)	Top Quintile	Bottom Quintile	Difference (t-statistic)
t	0.0454	0.0102	0.0352 *** (3.73)	0.0651	0.0034	0.0617 *** (4.06)
t+1	-0.2287	-0.2396	0.0109 (1.62)	-0.2411	-0.2236	-0.0175 (-1.57)
t+2	0.0226	0.0501	-0.0275 ** (-2.50)	0.0022	0.0759	-0.0737 *** (-4.23)
t+3	0.0184	0.0519	-0.0335 *** (-2.72)	0.0087	0.0887	-0.08 *** (-4.02)
t+4	0.0148	0.0286	-0.0138 (-1.09)	-0.0010	0.0542	-0.0552 *** (-2.76)
t+5	0.0319	0.0476	-0.0157 (-1.20)	0.0426	0.0589	-0.0163 (-0.78)

Panel C: Comparison of Abnormal Returns (Using Size and BE/ME Matched Portfolio) between Subgroups formed by Unexplained Compensation

	Positive	Negative	Difference (t-statistic)	Top Quintile	Bottom Quintile	Difference (t-statistic)
t	0.0443	0.0127	0.0316 *** (3.33)	0.0616	0.0123	0.0493 *** (3.23)
t+1	-0.2309	-0.2303	-0.0006 (-0.07)	-0.2460	-0.2183	-0.0277 ** (-2.07)
t+2	0.0166	0.0439	-0.0273 ** (-2.39)	0.0222	0.0695	-0.0473 *** (-2.59)
t+3	0.0089	0.0269	-0.018 (-1.46)	0.0113	0.0507	-0.0394 ** (-2.01)
t+4	0.0044	0.0311	-0.0267 ** (-2.10)	-0.0079	0.0618	-0.0697 *** (-3.55)
t+5	0.0064	0.0315	-0.0251 * (-1.85)	0.0279	0.0478	-0.0199 (-0.98)

Table 6 (cont.)

Panel D: Comparison of Industry-Adjusted ROA between Subgroups formed by Unexplained Compensation

	Positive	Negative	Difference (t-statistic)	Top Quintile	Bottom Quintile	Difference (t-statistic)
t	0.0808	0.0728	0.008 *** (-2.60)	0.0944	0.0799	0.0145 *** (2.85)
t+1	0.0651	0.0586	0.0065 * (1.83)	0.0762	0.0685	0.0077 ** (2.28)
t+2	0.0568	0.0578	-0.001 (0.26)	0.0647	0.0627	-0.002 (-0.34)
t+3	0.0542	0.0642	-0.01 ** (-2.49)	0.0608	0.0636	-0.0028 (-0.43)
t+4	0.0579	0.0693	-0.0114 *** (-2.65)	0.0671	0.0763	-0.0092 (-1.31)
t+5	0.0545	0.0683	-0.0138 *** (2.96)	0.0618	0.0704	-0.0086 (-1.18)

TABLE 7
Regression of Change in Total Direct Compensation on Future Performance- Analyst Forecast and Analyst Forecast Errors

In this table, I use analysts' consensus forecast on earnings per share as the proxy of public information about firms' future performance. AF_{t+1} is analysts' consensus (median) forecast on a firm's earnings per share in year t+1, measured in the fourth month of fiscal year t+1, minus the actual earnings per share in t and scaled by the stock price at the end of fiscal year t. This variable measures analysts' expectation on the change in firm performance in year t+1. $D_{AF, t+1}$ is a dummy variable that equals 1 if AF_{t+1} is negative, and 0 otherwise. AFE_{t+1} is analysts' forecast error on earnings per share in t+1, defined as the actual earnings per share in t+1 minus analysts' consensus (median) forecast three months after the fiscal year end of t and scaled by the stock price at the end of fiscal year t. $D_{AFE, t+1}$ is a dummy variable that equals 1 if AFE_{t+1} is negative, and 0 otherwise. Please refer to Table 1 for variable definitions. ***, **, * statistically distinct from 0 at the 1%, 5% and 10% level (two-tailed). t statistics are reported in parentheses. Standard errors are clustered by firm and year.

$$\Delta TotalComp_t = \alpha_0 + \beta_1 AF_{t+1} + \beta_2 D_{AF,t+1} + \beta_3 AF_{t+1} * D_{AF,t+1} + \beta_4 AFE_{t+1} + \beta_5 D_{AFE,t+1} + \beta_6 AFE_{t+1} * D_{AFE,t+1} + \beta_7 \Delta ROA_t + \beta_8 \Delta ROA_{t-1,t-3} + \beta_9 RET_t + \beta_{10} RET_{t-1,t-3} + \beta_{11} Size_t + \beta_{12} ME/BE_t + \beta_{13} Leverage_t + \beta_{14} TotalComp_{t-1} + \varepsilon_t$$

TABLE 7 (cont.)

			(1)	*(2)*	*(3)*
Intercept	α_0		-6.63 *** (-9.07)	-6.06 *** (-7.32)	-6.47 *** (-9.06)
AF_{t+1}	β_1		0.26 (0.31)		-0.02 (-0.02)
$D_{AF, t+1}$	β_2		0.44 ** (2.33)		0.48 ** (2.45)
$AF_{t+1} * D_{AF,t+1}$	β_3	-	-0.03 (-0.01)		0.57 (0.24)
AFE_{t+1}	β_4			2.27 (1.43)	2.40 (1.38)
$D_{AFE, t+1}$	β_5			-0.11 (-0.95)	-0.13 (-1.09)
$AFE_{t+1} * D_{AFE, t+1}$	β_6	-		-3.51 ** (-2.11)	-3.26 * (-1.75)
Δ ROA_t	β_7	+	1.06 (0.79)	1.31 (0.99)	0.84 (0.61)
Δ $ROA_{t-1, t-3}$	β_8	+	1.27 (0.49)	2.09 (0.82)	1.24 (0.46)
RET_t	β_9	+	2.32 *** (10.44)	2.21 *** (9.73)	2.30 *** (9.79)
$RET_{t-1, t-3}$	β_{10}	+	1.87 *** (6.94)	1.80 *** (6.88)	1.80 *** (6.49)
$Size_t$	β_{11}		0.81 *** (12.08)	0.81 *** (12.13)	0.80 *** (11.88)
ME/BE_t	β_{12}		0.23 *** (5.14)	0.22 *** (5.10)	0.23 *** (5.12)
$Leverage_t$	β_{13}		-1.44 *** (-2.86)	-1.50 *** (-3.01)	-1.48 *** (-2.87)
$TotalComp_{t-1}$	β_{14}	-	-0.43 *** (-13.90)	-0.42 *** (-13.64)	-0.43 *** (-13.75)
Year and Industry Fixed Effects			Yes	Yes	Yes
Firm Clusters			Yes	Yes	Yes
Analyst Forecast $\beta_1 + \beta_3$		-	0.23 (0.01)		0.55 (0.06)
Analyst Forecast Error $\beta_4 + \beta_6$		-		-1.24 *** (6.92)	-0.86 ** (5.25)
N			10,959	10,814	10,430
Adj. R-Square			0.2492	0.2409	0.2476

FIGURES

FIGURE 1
Illustration of the Negative Association between Pay and Future Poor Performance

This figure illustrates the correlation between CEOs unexplained current compensation and future performance. When CEOs foresee bad news in the next period, they would get more (unexplained) compensation in the current period to offset anticipated losses in personal wealth. The solid line shows this negative correlation between current unexplained compensation and future performance. In contrast, when there is good news in the future, current unexplained compensation and future performance are positively correlated (the dotted line) due to the use of unobservable nonfinancial performance measures in compensation schemes (e.g., Hayes and Schaefer, 2000).

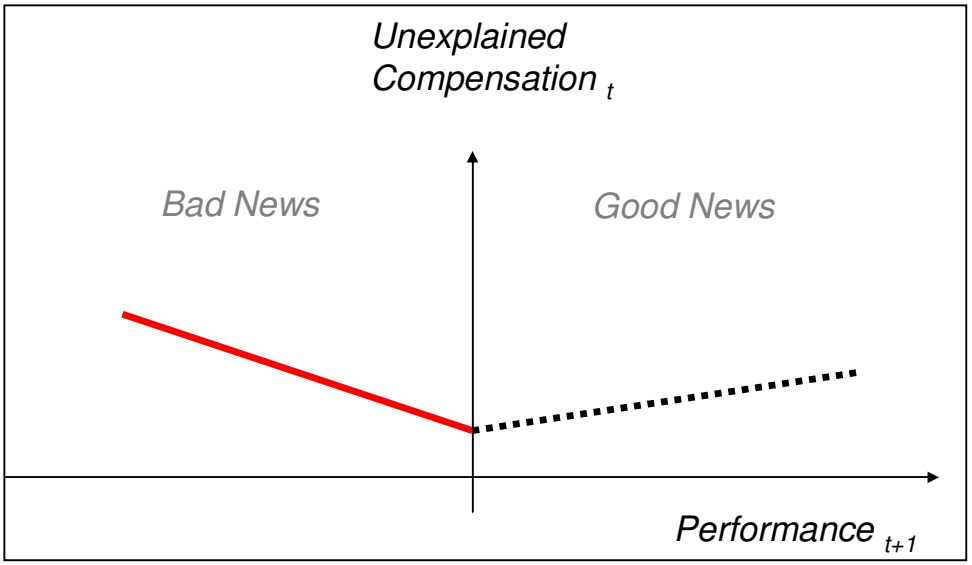

FIGURE 2
Five-Year Cumulative Abnormal Return

This figure presents the cumulative abnormal return in the five-year period from t+1 to t+5. The sample contains only firm-year observations that have negative RET in year t+1, so that the curves allow us to compare long-term performance between subgroups where CEOs do or do not get abnormal compensation prior to performance shocks. "Top Quintile" is a subset of sample that contains firm-year observations with the highest 20% of abnormal compensation in year t, while "Bottom Quintile" contains those with lowest 20% of abnormal compensation in t. Abnormal compensation is estimated as the residual of the following firm-specific time series AR(1) model regressing CEO's compensation on firm performance. $\Delta Comp_t = \alpha_0 + \beta_1 \Delta ROA_t + \beta_2 RET_t + \beta_3 Comp_{t-1} + \beta_4 \Delta Comp_{t-1} + \varepsilon_t$. Total Accrual is measured as net income minus net operating cash flow, scaled by total assets at the beginning of fiscal year.

Following Fama and French (1993), I independently sort and form reference portfolios for each size and BE/ME category once a year in July. Specifically, the sort on size is based on market value of common equity of each firm at the end of June, which yields five size portfolios. The sort on BE/ME also yields five equal-size portfolios. The book value comes from the latest fiscal year ending in the prior calendar year. The market value is from the previous calendar year end. The two independent sorts together yield 25 reference portfolios. I then calculate equally-weighted average stock return for each portfolio in each month as the expected return.