1. Introduction

Recent research has examined two potential influences on executive compensation. First is the influence of media attention and the associated political pressure (Core et al. 2007), and second is the influence of executives themselves (Bebchuk et al. 2007; Core et al.1999). With the aim of providing insights into CEOs' influence over compensation practices during a time of substantial political pressure, we examine executive compensation in the context of employee layoffs. Public knowledge of both executive pay and employee layoffs means that contracting between the CEO and board of directors (BOD) occurs under political pressures likely at their pinnacle.[1] CEOs must work to maximize his/her utility (compensation) under heightened risk of public criticism, while the BOD must work to properly compensate the CEO, but also, to avoid criticism of their actions on pay practices.

Our first expectation is that the CEO and BOD will substitute equity-based pay for bonus compensation.[2] This response may reflect an attempt to better align the CEO's incentives with the firm's long-term performance or an attempt to camouflage compensation (Dechow 2006; Bebchuk et al. 2002). We further anticipate that the influence of political pressure on CEO compensation will vary by the vulnerability of the CEO to public scrutiny. CEOs operating from stronger positions may better withstand public outcry in response to downsizing decisions. Alternatively, these CEOs may be better equipped to bargain with the BOD (Bebchuk et al. 2002, Murphy 2002; Bushman and Smith 2001). Hence, in the second part of our examination, we account for differences in CEOs' susceptibility to political pressure and/or bargaining position with their BOD. To capture this dimension, we rely on the CEO centrality measure in Bebchuk et al. (2007): CEO pay slice (CPS), a ratio reflecting the portion of total executive team compensation awarded to the CEO. Bebchuk et al. (2007) characterize this ratio as capturing the importance of the CEO in terms of ability, power, or value to the firm. In the final part of

[1] The confluence of layoffs and high CEO pay has been described as "a classic David and Goliath scenario … [with] top executives raking in multimillion dollar pay packages … yet heartlessly laying off employees" (Meyer 1996).
[2] To illustrate, on 4/19/01, in a press release, Tollgrade Communications Inc. announced both layoffs and cuts in CEO compensation (salary and bonus). The related proxy statement; however, reveals two changes: the CEO indeed was paid a lower salary and no bonus (while bonus was paid in two prior years) but received 22,000 in stock options valued at approximately $450,000 (while no options were awarded in the two prior years).

our analysis, we examine whether CEO centrality (high CPS or low CPS) is important in determining firms' post-layoff market performance. This analysis allows evaluation of whether compensation adjustments associated with layoffs are consistent with shareholder value maximization or with rent extraction by the CEOs (Bushman and Smith 2001).

We conduct our tests using a sample of 583 firms reporting CEO compensation and layoff expenditures for the years 1992-2004. In addition to persistent and increasing media coverage of executive compensation, this time frame is suitable because it includes two significant layoff cycles. Our main findings are summarized as follows. First, we find that as layoff intensity (layoff expense scaled by lagged total assets) increases, the composition of the CEO's pay package changes: bonus compensation decreases and equity-based compensation increases. This substitution of equity for bonus pay represents either a strategy to camouflage compensation to mask rent extraction (managerial power theory) or increased reliance on equity pay to better align CEO incentives with shareholders (agency theory).

Second, we find that firms' layoffs-related compensation adjustments vary by CEO centrality. For bonus compensation, as layoff intensity increases, CEOs of low CPS firms face bonus reductions while CEOs of high CPS firms experience small bonus increases. However, CEOs of high and low CPS firms benefit from similar increases in equity compensation associated with layoff intensity. Thus, the modest bonus increase and equity pay increase combine to insulate CEOs of high CPS firms from compensation decreases while CEOs at low CPS firms are left with lower total compensation, as their bonus decrease exceeds their equity increase. While the results for high CPS firms' CEOs are suggestive of managerial power theory, they are inconclusive absent a link to shareholder value.

Finally, we report descriptive evidence that subsequent to layoffs, high CPS firms exhibit inferior market performance relative to low CPS firms. Multivariate models reveal an overall performance improvement for firms undergoing layoffs, but this performance is not better for high CPS firms. This result, together with the superior compensation of CEOs at high CPS firms, is inconsistent with efficient contracting toward shareholder value maximization, and it suggests the managerial power perspective dominates among high CPS firms.

Our study contributes to compensation research in several ways. First, it responds to Murphy's (1999) call for research that helps us gain an "understanding more generally of the role of politics in shaping compensation practices" (Murphy 1999, p. 52). Second, in contrast to prior related compensation studies (e.g., Dechow et al. 1994; Gaver and Gaver 1998; Brookman et al. 2007b), which focus on the efficient contracting viewpoint, our models also consider the potential role of the managerial power theory. This broader perspective sheds light on the question of whether shielding executive compensation is consistent with efficient contracting or representative of opportunistic behavior by CEOs and/or BODs (Bushman and Smith 2001). Our findings add to a growing line of work documenting CEO influence as an important determinant of compensation (e.g., Collins et al. 2008; Bebchuk et al. 2007; Grinstein and Hribar 2004; Core et al. 1999). Finally, by relying on a continuous measure of the extent of the layoff decision, our analysis yields coefficient estimates that reflect the responsiveness to layoff intensity rather than documenting the existence of a response. Because layoffs continue as a widely utilized strategy, understanding the magnitude of compensation adjustments at different levels of layoff intensity is more insightful than simply understanding that compensation adjustments occur in response to layoffs.

The next section provides background, reviews the relevant literature and develops our hypotheses. In the third and fourth sections, we present the research design and describe the sample and data. Results are reported in the fifth section. Finally, our sixth section provides concluding remarks.

2. Background, literature review, and hypothesis development

2.1. Background and Relevant Literature

Layoffs

The rate of layoffs typically runs counter to the health of the economy. This relation held throughout the 1980s and 1990s, though layoffs were higher than expected in the robust economy of the mid-1990s. For more educated, older workers, the rate of job loss increased in the 1990s, consistent with the expanded reach of layoffs to include white collar workers (Farber 2003). Notably, after 1990, media coverage of layoffs increased dramatically (Farber and Hallock 1999, Figure 1).

While layoffs are undertaken with the goal of economic benefits to the firm through the optimization of labor costs, past studies have not produced a conclusive answer to the question of whether layoffs improve firm performance. Studies such as Worrell et al. (1991), Lin and Rozeff (1993) and Hallock (1998) document an association between layoff announcements and negative stock returns, while more recent studies report positive effects of layoffs on firm value (Palmon et al. 1997; Elayan et al. 1998; Chen et al. 2001; Brookman et al. 2007). The efficiency motivations of recent layoffs (versus reduced demand in earlier periods) may be responsible for the shift (Farber and Hallock 1999).

CEO Compensation

Public awareness of CEO compensation began with the published surveys of executive compensation (e.g., Forbes) in the 1970s and 1980s. In the 1990s, as public ire over executive pay levels increased, the U.S. Congress instituted a limit on the tax deduction for non-performance based CEO pay, and the SEC required increased disclosure about executive compensation. Despite such regulatory changes, average CEO pay continued to grow dramatically as did media coverage of executive compensation.[3] National political interest in the executive pay issue continues as evidenced by recent Congressional proposals regarding executive pay (H.R. 1257 and S. 349) and a statements from the Executive Branch expressing concern over executive compensation and noting that BODs must ensure shareholders see net benefit from compensation arrangements (*Wall Street Journal*, October 12, 2007).

The literature examining the relationship between CEO compensation and performance is quite robust. The framework has traditionally been agency theory and more specifically, optimal contracting (e.g., Ross, 1973; Mirrlees, 1976; Holmstrom, 1979). This approach stipulates that CEO compensation contracts are devised by the BOD to align the interests of risk-averse managers with the interests of shareholders (Murphy 1999). Prior research documents a strong relationship between both accounting and market-based performance variables and CEO compensation (e.g., Jensen and Murphy 1990; Gaver and Gaver 1998; Murphy 1999; Core and Guay 1999; Bushman and Smith 2001; Hanlon et al. 2004;

[3]Average CEO pay grew more than 250 percent from 1992-2002 (Jensen and Murphy 2004, Figure 3). Core et al. (2007) report dramatic increases in coverage of executive compensation over the years 1994 to 2002.

Murphy and Oyer 2003; Leone et al. 2006; Carter et al. 2007). Existing research also addresses the role of corporate governance aspects in executive compensation contracts. The analysis in Core et al. (1999) links CEOs' excess compensation and weaker corporate governance. In contrast, Anderson and Bizjak (2003) do not find evidence of an association between more independent compensation committees and CEO pay.

Bebchuk et al. (2002) propose the managerial power theory which explicitly argues that CEOs have the capacity to influence their compensation and that CEOs with more power are better able to extract rents or excess pay. In introducing this approach, Bebchuk et al. (2002) suggest the managerial power view be considered in addition to optimal contracting theory to more fully understand compensation practices. They acknowledge limits on CEOs' ability to obtain excess pay, primarily outrage costs. To the extent that a CEO's excess pay is likely to be publicly discernible, the risk of outrage among shareholders' and of public embarrassment reduce the likelihood the board and/or CEO adopt such a pay package. Rather than granting excess pay or making payments in observable forms (e.g., bonus payments), the board and CEO may choose to camouflage pay both to keep excess pay and to avoid outsiders' knowledge. Grinstein and Hribar (2004) find that the variation in bonuses associated with merger and acquisition transactions is related to CEO effort and skill but that a measure of managerial power explains much more of the variation in bonuses. Their analysis of abnormal returns reveals transaction announcement returns that are essentially zero except for the significant negative abnormal returns of those transactions led by the most powerful CEO group. Considered together, the larger bonuses and negative market reaction to powerful CEO transactions are consistent with expectations of the managerial power perspective.

Jensen and Murphy (1990) note that the public nature of executive compensation contracts raises the prospect that politics will influence executive compensation. Their analyses provide results consistent with political forces constraining (implicitly regulating) the pay for performance relationship for CEOs. Murphy (1999) explicitly considers the potential influence of political costs on compensation contracts, and provides evidence of increased levels in CEO pay and increased performance sensitivity in the years

after the executive pay controversy first erupted in the early 1990s. He suggests future research work to provide a better understanding of the influence of politics on compensation.

CEO Compensation and Layoffs

When media coverage includes both news of layoffs and news of CEO pay, the exposure is typically intense. The business press has characterized CEOs in the layoffs context as greedy and villainous (Meyer 1996; Sloan and Underwood 1996), while CEOs have defended layoff decisions as difficult but necessary to making firms efficient and competitive (Meredith 1996; De Pree and Mahoney 1996). Dial and Murphy (1995) examine, among other things, executive compensation under the General Dynamics (GD) Gain/Sharing Plan. Payouts under this plan closely followed its adoption and were linked to firm announcements of layoffs, generating fierce criticism from shareholders, employees, and politicians, all of which was detailed in the business press. Much of the outrage focused on the impropriety of executive bonuses in a time period of numerous employee layoffs. Dial and Murphy observe (p. 285) the importance of political forces and media attention in determining GD's compensation policies and suggest gains from equity are more acceptable than cash bonuses.

The literature examining associations between layoffs and CEO compensation is far from complete. Given the negative media attention corporate layoffs normally attract, layoffs are capable of generating significant political costs to both the CEO and BOD (Dial and Murphy 1995).[4] Hallock (1998) finds total compensation of CEOs is unaffected by layoffs but notes that the failure to find an association may be attributed to the inability to break total compensation into its various components. Brookman et al. (2007) consider the components of compensation (cash, stock and total) in a sample of firms announcing layoffs and a matched sample of non-layoff firms. They find that CEOs are rewarded with increased total compensation for undertaking layoffs.

Because the media and political pressures associated with layoffs imply higher risks of outrage costs in response to knowledge of excess pay, we choose to examine CEO compensation for firms that

[4] Publications such as *Industry Week* and *Time* magazine have argued that layoffs have negative long-term impacts that might not be fully perceived by management. A more drastic view has been voiced by some critics by stating that CEOs seem to be rewarded for firing people (Sloan and Underwood 1996).

have undergone layoffs. Executives in these firms are unable to justify their pay by its association with good firm performance. For these firms and CEOs, we examine the extent to which equity-based pay is substituted for bonus pay as a camouflage technique during layoffs. Though described as substitutes in the CEO pay package, these two types of compensation differ in their implications for the firm.[5] Most notably, they differ in transparency and their impact on reported earnings. Bonus payments are reflected as an expense on the income statement (reducing earnings) and their amounts are easily understood. Equity based pay typically does not involve compensation expense (only footnote disclosure is required for the sample period examined), meaning it is much less visible and its interpretation is difficult to grasp.[6] Only bonus payments require the use of firm cash, a particularly constrained asset for the typical firm undergoing layoffs, and finally, bonus payments are tied to current performance (e.g., ROA) while equity-based pay is linked to future performance (i.e., future stock appreciation).

We pursue several questions as yet unanswered. First, given recent attention to managerial power and executive compensation, we extend the analysis to consider whether compensation changes associated with layoffs differ by a measure reflective of managerial power, CEO centrality. Second, our analysis considers whether firms' post-layoff performance varies by CEO centrality and how those performance differences compare to differences (by CEO centrality) in the manner in which firms compensate their CEOs. In methodological terms, while prior work has focused on the association between CEO compensation and the layoff event, our models use a continuous measure of layoff intensity allowing insight into the responsiveness of compensation to layoffs of different magnitudes. Our empirical models rely on fixed effects panel data estimation which focuses on firm-level deviations and allows the years in which sample firms did not report layoff expenditures to serve as control observations

[5] See Murphy (1999) for a description of the different components of CEO compensation.
[6] During the study's time period, the accounting treatment of stock-based compensation was based on Accounting Principles Board Opinion 25 (APB25; years 1992-1994) and FASB Statement 123 (FAS123; years 1995-2004). Because most options were granted "at the money," compensation expense was zero under APB25. The same was true under FAS123 because FAS123 required only footnote disclosure of compensation expense measured by the fair value method. Almost all companies chose the "disclose only" route (Frederickson et al. 2006; Aboody et al. 2004) until FAS123R provisions, effective for most firms after 2005, required the fair value method be used to measure compensation expense reported in the income statement.

against the layoff years of those firms. The primary advantage of this approach is that the resulting coefficient estimates reflect the impact of a treatment – in this case, layoffs – because they are based on measures for the same firm before and after the layoff. Relative to regression analysis of a sample of layoff firms matched to non-layoff firms, our approach better isolates the effects of layoffs by avoiding introduction of uncontrolled differences between layoff and non-layoff firms.

Finally, though this study's focus is squarely on layoffs, we recognize that layoffs may be undertaken as part of a corporate restructuring. Evidence in Dechow et al. (1994) reveals that restructuring firms shield CEOs cash compensation from the effects of restructuring charges. On the other hand, evidence in Defeo et al. (1989) does not suggest that corporations remove gains on equity for debt swaps (often undertaken as part of corporate restructurings) from accounting earnings for purposes of executives' bonus plans. Relative to this work, our study represents an opportunity to examine a loss element (layoffs expense versus swap gain) and more importantly, to consider the implications for equity based pay in addition to and in combination with cash based pay.

2.2 Hypotheses

As discussed above, during corporate layoffs, the perception that CEO compensation is excessive may generate political costs potentially important to both the CEO and the BOD in determining compensation arrangements. The question then becomes: how do the board and CEO respond to this environment? Specifically, how is CEO compensation adjusted in response to layoffs to represent shareholder interests while at the same time ensuring the decisions taken will withstand public scrutiny?

To address this question, we draw from prior research (Healy and Kang 1987; Dechow et al. 1994; Gaver and Gaver 1998; Adut et al. 2003; Balsam et al. 2007) that examines adjustments to CEO compensation in response to managerial actions that adversely impact accounting metrics (i.e., earnings). This research documents that boards use discretion in determining the effects of these actions on CEO compensation (i.e., shield the CEO's cash compensation from the actions' earnings-decreasing effects), and that such discretion is necessary to encourage the CEO to undertake potentially value enhancing actions (Dechow et al. 1994). In the context of corporate layoffs, the situation may be complicated by the

negative public attention that accompanies layoffs: protecting (even increasing) the CEO's compensation during layoffs would involve more political risk. More succinctly, *how can the CEO receive pay raises (and/or bonuses) when others are losing their jobs!* (Dechow 2006, p. 201).

We predict that, to attenuate negative public sentiment while maintaining adequate incentives to ensure that the CEO undertakes a potentially value-maximizing action, the BOD will rebalance the components of CEOs' compensation contracts. To be precise, we hypothesize that the less visible (and more difficult to measure and interpret) forms of compensation (e.g., equity compensation in the form of stock options and restricted shares) will be substituted for the highly visible and easily understood cash component (bonus) of the compensation contract (Dechow 2006). This strategy may represent efficient contracting motivations to strengthen the tie between the CEO's compensation and the firm's future performance. It also is descriptive of a strategy in which the BOD camouflages CEO compensation in response to the political pressure of the environment (Dechow 2006; Bebchuk et al 2002). Layoffs intensity will determine the extent to which the strategy is used. The above discussion leads to our first set of hypotheses (in alternate form):

H1a: Layoff intensity is negatively associated with bonus compensation, and

H1b: Layoff intensity is positively associated with equity compensation.

CEOs are expected to vary in the extent to which their relationships with their BOD may affect their compensation (Bushman and Smith 2001) and the extent to which they are influenced by the risk of outrage costs. In contrast to prior studies (e.g., Dechow et al. 1994; Gaver and Gaver 1998), which assume that favorable (to the CEO) adjustments to CEO cash compensation are necessary to motivate value-enhancing managerial actions, we consider an additional explanation reflective of managerial power theory: does the CEO's relative position within the firm help explain changes in compensation? As discussed earlier, we rely on the measure of CEO centrality developed in Bebchuk et al. (2007), to indicate the CEO's susceptibility to outrage costs and/or ability to bargain with the BOD. We expect CEOs at high CPS firms (more central to the firm) will be better able to avoid bonus reductions (H1a). Because equity compensation is less visible, we expect CEOs at high CPS firms will experience larger

increases in equity compensation (H1b). This discussion suggests the following set of hypotheses (in alternative form):

> **H2a**: In response to layoffs, CEOs at high CPS firms experience smaller decreases in bonus compensation.
>
> **H2b**: In response to layoffs, CEOs at high CPS firms experience larger increases in equity compensation.

If CEOs of high CPS firms are protected from decreases in compensation, an explanation may be that the board recognizes that CEOs more central to the firm are more capable of generating improvements in firm performance (e.g., Allen and Panian 1982). Though camouflaging compensation is typically associated with managerial power perspective, in this case it also is consistent with maximizing shareholder value. However, absent evidence of superior post-layoff performance for high CPS firms, insulation of high CPS firms' CEOs from compensation cuts associated with layoffs may be indicative of excess pay. The following comment in Bushman and Smith (2001, p. 273) reflects the competing explanations we examine: whether … "these findings [adjustments to CEO compensation] represent opportunistic behavior resulting from a CEO's control over the board of directors, or shareholder value enhancing adjustments by the board is still an open question." Based on the above reasoning, we propose our third and final hypothesis (in alternative form):

> **H3**: The post-layoff performance of high CPS firms exceeds that of other firms.

3. Research design

3.1 Empirical Specifications

Hypothesis 1a (1b) predicts layoff intensity is negatively (positively) associated with bonus (equity) compensation. To test these hypotheses, we use the following specification[7]:

$$COMP_{it} = \beta_{0it} + \beta_1 Layoffs/ta_{it} + \beta_j CONTROLS_{it} + e_{it} \qquad (1)$$

When testing hypothesis 1a, the dependent measure COMP (which is cpi-adjusted to 1984 constant dollars) is defined in two ways. In the first definition, COMP is the natural logarithm of bonus

[7] In our sample, approximately 12% (10%) of the bonus (equity) observations are left-censored at zero. Hence, we re-estimate our models using a Tobit specification obtaining virtually the same results.

compensation (Lnbonus), while for the second one, COMP is coded 1 if the CEO received no bonus (Zerobonus), and 0 otherwise.[8] For hypothesis 1b, COMP is defined as the natural log of equity compensation (Lnequity). We also estimate equation (1) with the natural logarithm of total compensation (Lntotalcomp).

The primary explanatory variable of interest, Layoffs/ta, is defined as the pre-tax layoff expense scaled by lagged total assets. Layoff expenditures, typically reported as part of the footnote for non-recurring items and special charges, were hand-collected from sample firms' 10-Ks. We searched for various variations of the following terms: "workforce reduction expenditures", "employee severance and termination benefits", "employee termination costs", "labor contraction/reduction costs".

CONTROLS represents a vector of other variables that are posited to influence CEO compensation based upon prior literature (see e.g., Murphy 1999; Core and Guay 1999; Core et al. 1999; Hanlon et al. 2004; Hartzell and Starks 2003). CONTROLS include Adj_Earnings, defined as earnings before layoff expense, taxes, extraordinary items and discontinued operations in year t, scaled by lagged total assets, market-adjusted returns (Marketreturn), the natural log of total assets (Lnassets), and the market-to-book ratio (Market/book) to control for market returns, size, and for the investment opportunity set, respectively. We also include CEO tenure (Tenure) measured as the number of years a CEO has been in office to control for the possibility that the level of executive compensation is related to experience and/or CEO horizon. Adut et al. (2003) find that CEO compensation has been growing at a faster rate than the rate of inflation; thus, we include the inflation-adjusted out-of-sample median level of CEO compensation to control for macroeconomic effects (Trend). We account for losses by including a categorical variable coded 1 if the firm reported a loss (Loss). Since prior research (e.g., Grinstein and Hribar 2004) finds that CEOs engaging in merger and acquisition deals get additional compensation, we include a dummy variable coded 1 if the firm acquired another firm (merger). We control for the

[8] We also estimate equation (1) with the natural logarithm of cash compensation (Lncashcomp, where cash compensation is salary+bonus). While generally weaker, results are consistent with those for Lnbonus, and are consistent with prior research.

potential selection and simultaneity bias induced by our sample's inclusion of only firms undergoing layoffs. Specifically, we include an additional explanatory variable, the Inverse Mills ratio (Heckman), in our compensation models (further discussion in results section). Finally, the model is estimated using panel data techniques and the fixed-effects approach.[9] As described above, this approach is well-suited to the sample and data.

For hypothesis 1a, because we expect a negative relationship between Layoffs/ta and Lnbonus, we expect the coefficient estimate for β_1 to be negative and significant. But, for Zerobonus, we expect a positive coefficient for β_1 (i.e., increased likelihood of no bonus at all).

In evaluating equity compensation (hypothesis 1b) and total compensation, we modify equation (1) by including Core and Guay's (1999) proxies for the deviation from optimal equity incentive levels (Deviation) and cash constraints (Cashshortfall) as additional control variables.[10] If the coefficient estimate for deviation is negative, it suggests that equity incentives have fallen below their optimal levels. To the extent firms substitute equity for cash compensation when facing cash constraints, we expect to see a positive association between cash shortfall and equity compensation.

For hypothesis 1b, the variable of interest is again Layoffs/ta. Because we expect a positive relationship between layoff intensity and equity compensation, we expect the coefficient estimate for β_2 to be positive and significant. Collectively, observing a negative coefficient on Layoffs/ta when Lnbonus is the dependent variable and observing a positive coefficient on Layoffs/ta when Lnequity is the dependent variable suggests substitution toward equity based pay.

Hypothesis 2a (2b) states that, in response to layoffs, CEOs in stronger positions will experience smaller decreases in bonus compensation (larger increases in equity compensation). To test these predictions we estimate the following model:

---

[9] Generally, under a fixed-effects framework, the dependent and independent variables are presented as "mean differences" (i.e., $y_{it} - \bar{y}_t = \beta'(x_{it} - \bar{x}_t) + (\varepsilon_{it} - \bar{\varepsilon}_t)$ which takes into account differences between firms across time. Estimation of change models (e.g.,change in lnbonus from year t-1 to t) provides consistent results.

[10] Our empirical proxy capturing the deviation from optimal incentive levels is the change in the delta of existing equity holdings. We follow Core and Guay (1999) in defining delta (see Table 1 for details).

$$COMP_{it} = \theta_{0it} + \theta_1 CPSd_{it} + \theta_2 Layoffs/ta_{it} + \theta_3 Layoffs/ta_{it} * CPSd_{it} + \theta_j CONTROLS_{it} \quad (2)$$

As before, COMP takes the values of Lnbonus, Zerobonus, Lnequity and Lntotalcomp. Adj_Earnings, Layoffs/ta and CONTROLS are defined above. We use Bebchuk et al.'s (2007) measure of CEO centrality, CEO Pay Slice (CPS) to proxy for the centrality of the CEO position. CPS is the ratio of the CEO's total compensation to the aggregate top-five executive total compensation.[11] For ease of interpretation, we define CPSd as a dummy variable that equals 1 when the firm's CPS is above the sample median CPS (0.408), and 0 otherwise. We anticipate its coefficient estimate (θ_1) will be positive and significant. Notably, our empirical results are similar when we estimate the model using actual values of CPS and are robust to the use of the g-score (Gompers et al. 2003) as an alternate definition of CEO centrality/power.[12]

Our primary explanatory variables of interest are Layoffs/ta and Layoffs/ta*CPSd. For bonus compensation (hypothesis 2a), we expect the coefficient estimate for Layoffs/ta (θ_2) to be negative and significant implying a penalty to bonus compensation in association with layoff intensity for CEOs of low CPS firms (CPSd=0). However, we expect the coefficient estimate for the interaction term between Layoffs/ta and CPSd (θ_3) to be positive and significant, reflecting recovery of the penalty to bonus compensation for CEOs of high CPS firms (CPSd=1). For equity compensation (hypothesis 2b), we expect the coefficient on Layoffs/ta to be positive and significant, suggesting that layoff expenditures are associated with additional equity compensation for CEOs of low CPS firms. In addition, we expect the coefficient on the interaction term (Layoffs/ta*CPSd) to be positive and significant, suggesting even larger grants of equity associated with layoffs for high CPS firms' CEOs.

Hypothesis 3 predicts superior post-layoff performance for high CPS firms. We assess this hypothesis using three market performance measures over up to five years of post-layoff year performance. First, Ind-adj bhar measures sample firms' performance by their returns relative to

[11] Bebchuk et al. (2007) report a negative association between CPS and several firm characteristics (e.g., Tobin's Q, merger-related stock returns). We replicate the negative relation between CPS and Tobin's Q for our sample.
[12] G-score is posited to capture the power of CEOs relative to shareholders. See sensitivity tests for more detail.

comparable buy and hold returns for the industry (at 2 digit SIC codes). In the definition below, R_{it} represents the actual buy-and-hold return for each layoff firm-year while R_{ind} represents buy-and-hold return for the matching industry and years.

$$\text{Ind-adj bhar}_{it+n} = R_{it+n} - R_{indt+n} \quad (3)$$

Second, we measure performance by the *abnormal* buy-and-hold returns (abhar) calculated based on the procedure pioneered by Barber and Lyon (1997). This approach controls for several documented sources of misspecification (see e.g., Kothari and Warner 1997) and measures returns as follows:

$$\text{abhar}_{it+n} = R_{it+n} - E(R_{pt+n}). \quad (4)$$

R_{it} represents the actual buy-and-hold return for each layoff firm-year observation while $E(R_{pt})$ represents expected buy-and-hold return for a portfolio of similar firms in terms of size (market value of equity), book-to-market ratio, and prior buy-and-hold returns (details in Lyon et al. 1999). abhar measures sample firms' returns relative to a benchmark portfolio matched on size, book-to-market, and prior performance.

Lastly, we measure performance as the monthly firm return (R_{it}) minus the risk-free rate (R_{ft}) (Fama and French 1996).

$$\text{Perform}_{it+n} = R_{it+n} - R_{ft+n} \quad (5)$$

If the Ind-adj bhars (abhars and Perform) of high CPS firms exceed those of low CPS firms, it will support the prediction in hypothesis three and efficient contracting.

Finally, using all sample firms and years and Fama French factor models (Fama and French 1996), we use the final measure, Perform, in estimating the following model:

$$\text{PERFORM}_{it+n} = \phi_0 + \phi_1 \text{CPSd}_{it} + \phi_2 \text{Layoffs/ta}_{it} + \phi_3 \text{Layoffs/ta}_{it} * \text{CPSd}_{it} + \phi_j \text{CONTROLS}_{it} \quad (6)$$

The value for ϕ_0, the coefficient for the regression constant, then represents the excess return for the portfolio after controlling for risk. The explanatory variables CPSd and Layoffs/ta are defined in the discussion above. To the extent that the interaction term of Layoffs/ta and CPSd is positive and significant, it will suggest that CEOs at high CPS firms garner superior post-layoff performance and will support our third hypothesis. CONTROLS is a vector of variables posited to affect future performance. It

includes Marketreturn (value-weighted monthly market return less the risk free rate), SMB (factor mimicking portfolios based on size), HML (returns for portfolios based on the book-to-market ratio), and Momentum (difference in returns for market winners and losers over the six months ending one month before the current month).

3.2 Sample and Data Sources

The study's sample includes all firm years on the June 2005 version of Execucomp (S&P 1500 firms) that meet three conditions. First, the firm must have reported layoff expenditures in at least one of the years 1992-2004. Second, as in earlier work (Atiase et al. 2004; Lopez 2002), in at least one year, the firm must have reported a negative special item the amount of which exceeds one percent of total assets. Finally, the financial data required for variable measures must be available for the firm. This process results in 5,724 observations representing 583 S&P 1500 firms observed over time. As reflected in Table 1, 2,176 are observations for years in which firms reported layoff expenses, and 3,548 observations are for those same firms but in years in which they did not report layoff expenses.

5. Results

5.1 Descriptive Statistics

Table 1 summarizes the descriptive statistics for the sample. Panel A reports statistics describing the firms' layoff expenses. At slightly more than 1 percent of assets and almost 13 percent of earnings (before layoff expense), these layoffs clearly represent significant events to the firms. Panel B describes the study's main explanatory variables. CEO cash compensation includes bonus and salary compensation and averages almost $900,000, more than half of which is bonus compensation (average of $492,834). 16.5 percent of sample observations reflect firm years in which the CEO received no bonus. Mean equity compensation, including both restricted stock and stock options, is $2,349,072. While all three elements of compensation are somewhat positively skewed, the mean and median for equity compensation suggest it is more strongly skewed. To account for this in the empirical models, estimation relies on the natural log of variables involving compensation amounts.

Sample firms are large and profitable and have positive market returns and reasonably good growth opportunities. CPS is 41 percent, which is consistent with Bebchuk et al.'s (2007) estimate of approximately 34.4 percent.[13] On average, the CEO has been with the firm more than 7 years.

In financial terms, layoff year observations differ from non-layoff year observations on expected dimensions. Panel B results reveal layoff year observations are generally less profitable, have a lower market to book ratio, and are more likely to have a CEO with fewer years in that position.

Panel C contrasts the compensation elements for sample firms in layoff years and non-layoff years. In layoff years, bonus compensation is significantly lower and the likelihood of the CEO earning no bonus compensation is significantly higher. In contrast, equity compensation and total compensation are significantly higher for layoff year observations.

Panel D contrasts compensation differences for sample firms in non-layoff years and in layoff years by CEO centrality or CPS. The descriptive results are consistent across non-layoff years and layoff years: relative to CEOs of low CPS firms, CEOs of high CPS firms are paid significantly more in bonus compensation, in equity compensation, and in total compensation; and, they are significantly less likely to receive no bonus. Amounts reported in the final pair of columns in Panel D reflect the difference in mean compensation of CEOs at high CPS firms (and at low CPS firms) in non-layoff years and in layoff years. For CEOs at high and low CPS firms, the results indicate lower bonus compensation, higher equity compensation, and higher total compensation in layoff years.

The results in Panel C and Panel D frame our first two pairs of hypotheses. First, in response to layoffs, do CEOs receive less bonus compensation and more equity compensation? Univariate results in Panel C suggest the answers will be yes and yes, consistent with predictions in Hypotheses 1a and 1b. Second, in response to layoffs, are CEOs of high CPS firms protected from decreases in bonus compensation while benefitting from increases in equity compensation? Univariate results in Panel D

[13] If Execucomp reports compensation for more than five executives in any year (due to executive turnover, mergers etc), we follow Bebchuk et al. (2007) and restrict computation of CPS to only the five highest paid executives.

(smaller bonus cuts and larger equity increases for CEOs of high CPS firms) suggest that again the answers will be yes and yes.

Though the descriptive results are suggestive, simple univariate analysis is insufficient to address any of these questions. Thus, we proceed to multivariate analysis to control for performance, CEO centrality, and other dimensions that may differ between layoff and non-layoff firm years.

5.2 Multivariate Results

Pearson correlation coefficients in Table 2 suggest collinearity will not be problematic. Beyond the associations between the dependent measures (components of total compensation), only the association between realization of a loss and return on assets is substantial.[14] Because the sample is composed only of firms that have undertaken layoffs, our compensation models may be adversely affected by selection bias if the variables (e.g., prior firm performance) used to predict compensation are also associated with the decision to layoff. This potential condition is an omitted variable problem (Heckman 1979). In addition, CEOs of treatment firms may have chosen layoffs in expectation that their own compensation would be (would not be) changed. This describes a potential simultaneity/endogeneity issue. We use the Heckman (1979) approach to account for this potential bias. We first estimate a probit model of the likelihood that a firm will undertake layoffs.[15] Then, we use the results from this probit estimation to construct the inverse Mills' ratio (Heckman), which we include as an additional explanatory variable to account for the potential bias. Grinstein and Hribar (2004) use a similar approach.

Tests of Hypotheses 1a and 1b - Relation between Layoff Intensity and CEO Compensation

Table 3 reports the results of estimation of model (1). Generally, the models have good explanatory power, and control variables behave as expected.[16] Evaluation of the associations with total compensation (Column IV) reveals a coefficient (-0.589) on the variable **layoffs/ta** that is not significantly different from zero, indicating that, all else equal, total compensation does not change in

[14] Correlations in Table 2 display the correct theoretical signs, so we refrain from discussing them in the text.
[15] Layoff choice model: Probability (Layoff=1) = f (ROE $_{\text{3-yr average prior to layoff}}$, Industry-adjusted BHAR $_{\text{3 prior years}}$, Sales Growth $_{\text{from year t-1 to t}}$, Delta $_{\text{t-1}}$, New Boss, LN Sales $_{\text{t-1}}$ and Leverage $_{\text{t-1}}$+ error term). The Appendix reports the model and results, which are consistent with theory and prior work (Brookman et al. 2007a; Mehran et al. 1998).
[16] We exclude outliers based on studentized residuals and Cook's distance metrics (Neter et al. 1996).

response to changes in layoff intensity. This result is consistent with Hallock (1998) but contrasts with Brookman et al. (2007b) who report that CEO compensation is higher for layoff firms.[17]

The focus of the first pair of hypotheses is bonus compensation and equity compensation. Column I results reveal a negative relationship between layoff intensity and bonus compensation. Consistent with Hypothesis 1a, bonus compensation declines as layoff intensity increases (**layoffs/ta** coefficient estimate = -6.734). For a 1 percent (2 percent) increase in layoff intensity, the implication is a bonus reduction of 6.5 percent (12.6 percent).[18] Thus, the evidence suggests that firms respond to increasing layoff intensity by reducing CEO bonus payments. In fact, bonus payments may be eliminated for the layoff year. The logit result for **layoffs/ta** in Column II reflects the increasing likelihood of no bonus payment as layoff intensity increases (coefficient estimate = 6.418). This increased likelihood of no bonus together with the decrease in bonus amount support the prediction in hypothesis 1a: firms undergoing layoffs tend to reduce CEO bonus payments.

Table 3's Column III highlights the results related to Hypothesis 1b. The coefficient estimate for **layoffs/ta** indicates a positive relationship exists between equity compensation and layoff intensity (coefficient estimate = 9.762). An increase in layoffs/ta by 1 percent (2 percent) implies an increase the equity component of CEO compensation of 10.3 percent (21.6 percent). This finding, consistent with Brookman et al. (2007), supports the hypothesis 1b: in response to increasing layoff intensity, firms increase their reliance on equity in compensating the CEO.

Altogether, the association between **layoffs/ta** and decreased bonus compensation, the relationship between **layoffs/ta** and increased equity compensation, and the absence of a significant relation between **layoffs/ta** and total compensation combine to suggest a substitution strategy in response to layoff intensity: firms reduce highly public bonus compensation and offset the bonus reduction with increases in the less visible equity compensation element.

---

[17] Brookman et al. (2007b) based their analyses on a sample of layoff firms and matched non-layoff firms and used a dummy variable to distinguish layoff periods.

[18] We base the magnitude of effect estimates on the antilog of the product of the coefficient estimates and the change in layoff intensity less 1 (Murphy 2002). For example, $e^{6.734*1\%} - 1 = 6.5\%$.

Tests of Hypotheses 2a and 2b - Relation between Layoff Expenditures and CEO Compensation as Affected by CEO Centrality

Table 4 reports the results of estimating equation (2). In general, the models exhibit good explanatory power, and control variables perform as expected. Two additional variables, **CPSd** and the interaction term **layoffs/ta*CPSd**, are included to control for compensation differences between firms with high and low CEO centrality (**CPSd**) and to set apart the potentially different influence of layoff expenditures on the compensation of CEOs of firms with high CPS (**layoffs/ta*CPSd**).

We first consider total compensation in Column IV. The variable **CPSd** is significantly predictive of higher total compensation (coefficient estimate = 0.478). The magnitude of this variable's effect suggests that, all else equal, CEOs of high CPS firms expect total compensation of 61.3 percent more than their counterparts. The relationship between **layoffs/ta** and total compensation is negative and significant, reflecting a penalty to total compensation that worsens with layoff intensity (coefficient estimate = **-** 3.522). For CEOs of low CPS firms, the implication is a 3.5 percent (6.8 percent) reduction in total compensation in response to a 1 percent (2 percent) increase in layoff intensity. For CEOs of high CPS firms, the impact of increasing layoff intensity by 1 percent (2 percent) is revealed in the combination of the main effect in the term **layoffs/ta** and the differential association between layoff expenditures and total compensation in the interaction term **layoffs/ta*CPSd**. The differential effect is reflected in the positive and significant coefficient estimate (5.837) of **layoffs/ta*CPSd** and implies – for high CPS firms' CEOs – a recovery of 6.0 percent (12.4 percent) in total compensation in response to a 1 percent (2 percent) increase in layoffs/ta. Together with the main effect decrease of 3.5 percent, this differential implies an increase of 2.5 percent in total compensation of high CPS firms' CEOs. Thus, while CEOs of low CPS firms experience a significant decline in total compensation when undergoing layoffs, CEOs of high CPS firms experience an increase in total compensation.

The second pair of hypotheses focuses on the differential impact of layoffs on the bonus and equity compensation of CEOs in more powerful positions. The regression results for bonus compensation appear in Column I. The variable **layoffs/ta** has a coefficient estimate that is negative and significant (-

13.378), implying a bonus penalty of more than 12.5 percent (23.5 percent) for CEOs of low CPS firms in response to a 1 percent (2 percent) increase in layoff intensity. However, for CEOs of high CPS firms, the differential association with bonus compensation appears in the positive interaction term **layoffs/ta*CPSd** (coefficient estimate = 15.798). In response to a 1 percent (2 percent) increase in layoff intensity, the coefficient implies a recovery of 17.1 percent (37.2 percent) of the penalty to bonus compensation. Combined, the main effect and differential effect for high CPS firms' CEOs reveal an increase in bonus compensation of 4.6 percent for CEOs of high CPS firms versus the 12.5 percent bonus reduction faced by their counterparts at low CPS firms. Thus, as predicted in hypothesis 2a, the potential political exposure associated with layoff intensity results in a discount to the bonus pay of CEOs of low CPS firms. However, the bonus compensation of CEOs at high CPS firms withstands the exposure and even increases in times of layoffs. Similarly, the results in Column II reveal an increased likelihood of no bonus for CEOs of low CPS firms as layoff intensity increases (coefficient estimate = 12.819). For CEOs of high CPS firms, the interaction term **layoffs/ta*CPSd** (coefficient estimate = **-**16.592) suggests a differential decrease in the likelihood of no bonus. Together, these findings reveal that CEOs at low CPS firms are vulnerable to decreases in bonus compensation in response to layoffs, while the bonus compensation of CEOs at high CPS firms is seemingly immune as it even increases modestly.

The empirical results for equity compensation appear in Column III. We observe that for CEOs of low CPS firms, layoff intensity is positively related to equity compensation (**layoffs/ta** coefficient estimate = 7.991) suggesting an increase of 8.3 percent (17.3 percent) in equity compensation in response to a 1 percent (2 percent) increase in layoff intensity. Interestingly, for CEOs of high CPS firms, the effect does not differ: the coefficient of **layoffs/ta*CPSd** (coefficient estimate = -0.354) is not significantly different from zero and suggests a 0.4 percent differential (0.7 percent) in equity compensation in response to a 1 percent (2 percent) increase in layoff intensity. Thus, in response to layoffs, CEOs in more powerful positions experience, on average, an increase of 7.9 percent in equity compensation. The insignificance of **layoffs/ta*CPSd** implies that the sensitivity of equity compensation to layoff intensity does not differ by CEO centrality. This finding contrasts with our prediction in hypothesis 2b.

Together, the results suggest utilization of a camouflage strategy during layoffs that differs by the centrality of the firm's CEO position and by the type of compensation. For CEOs of low CPS firms, highly visible bonus pay is reduced; but for CEOs of high CPS firms, bonus pay increases by a modest amount, suggesting the capacity to withstand political pressures. The strategy for equity compensation is to increase equity compensation in response to layoff intensity with response being no different for CEOs of high CPS and low CPS firms. For CEOs of low CPS firms, the combined bonus reduction and equity increase clearly demonstrate a substitution strategy, and leave them with decreased total compensation. For CEOs of high CPS firms, there is no evidence of a substitution strategy: both bonus compensation and equity compensation increase in response to increased layoff intensity so that on average, high CPS firms' CEOs experience increases in total compensation.

The above result – CEOs of high CPS firms are insulated from compensation decreases and are seemingly compensated for layoffs – naturally leads to our hypothesis 3 which evaluates whether CEOs of high CPS firms are better compensated because of their stronger bargaining positions (i.e., they are capable of rent extraction) or because they are able to lead firms to perform better in the periods after the layoffs (i.e., they are more able).

Tests of Hypothesis 3 - Post-Layoff Performance

Table 5 provides performance statistics – overall and by CPS - for sample firms in the years after layoff year. The positive overall means reveal that regardless of CEO centrality, layoff firms, on average, recovered in the five years after layoff. In Panel A, when the bottom third and top third of observations (by Ind-Adj bhar) are considered separately, it becomes clear that the bottom third of the sample did not recover while the top third consistently showed superior returns relative to their industry. High CPS firms also report consistently positive industry adjusted buy and hold returns, but relative to the comparable returns for low CPS firms, returns of high CPS firms are significantly lower (mean diff significantly negative). Panel B results, based on abnormal buy and hold returns (Ab. bhars), are consistent: mean abnormal returns are positive for all observations and for high CPS firms and low CPS firms. The abnormal returns of high CPS firms are lower than those of low CPS firms at three and four years out, but

are not significantly different in the other years. For the third market measure, Fama French returns, descriptive results are consistent: significant and positive mean returns for the full sample and for both high CPS firms and low CPS firms. For three of the four time periods (three years after layoffs, from one to three years after layoffs and from one to five years after layoffs), the risk adjusted returns of high CPS firms are significantly lower than those of low CPS firms.

Finally, we proceed to regression analysis of equation (6) to evaluate whether CEO centrality (CPS) is important in predicting post-layoff performance in a multivariate model. The results appear in Table 6. The adjusted R-squareds suggest modest but adequate model explanatory power. The coefficient estimate for **CPSd** is significant (marginally) only in the model in column II. The negative coefficient estimate implies lower returns over the first three years after layoff for high CPS firms, all else equal. The variable for layoff expenditures, **layoffs/ta**, has a significant and positive coefficient estimate in three of the four models of returns (models I, II, and IV): at three years after layoff (4.423), and average over the five years after layoff (0.827), and over the first three years after layoff (2.446). The coefficients reflect the *positive* influence of layoff intensity in year t on the firms' subsequent returns. To the point of hypothesis 3, the coefficient estimate for **layoffs/ta*CPSd**, the differential influence of layoff expenditures for CEOs in high CPS firms, is significantly different from zero only in one model: average returns over the five years after layoffs, where it is negative (-1.072). Thus, in the only model in which the subsequent returns of high CPS firms differ, the high CPS firms' returns are lower. Other model variables perform consistent with expectations. In sum, despite their higher compensation, the post-layoff improvements in market returns are not different for firms headed by CEOs of high CPS firms. Collectively, the analyses of post-layoff performance suggest that because the superior compensation of CEOs of high CPS firms is not linked with superior market performance (enhancing shareholder value), their compensation does not appear to be driven by ability or contribution, and the arrangement is consistent with rent extraction suggested by managerial power theory.

5.3 Sensitivity Tests

Additional Perspective of the Centrality of the CEO Position

Because the CEO's influence in bargaining over compensation may be limited to the extent the firm has strong governance, we estimate our main models using an alternate measure to the dummy variable for CPS: the governance index (g-score) developed by Gompers et al. (2003). The g-score is posited to capture the relative power of CEOs over shareholders.[19] When g-score is relatively high, shareholder rights are few, but when g-score is low, shareholder rights are numerous (Gompers et al. 2003). One of Gompers et al.'s (2003) main results is that weak shareholder rights (relatively high g-scores) are associated with lower firm value, profits, sales, and capital expenditures. In our sample, g-score ranges from 3 to 22, with a sample mean (median) of 9.64 (10). First, we estimate our models including g-score as an additional control variable. After the inclusion of g-score, results remain virtually unchanged. Second, because g-score may capture the same construct as CPS, we create a dummy variable equal to 1 if g-score exceeds the sample median (10). When this dummy variable is included in our regression models, we obtain results similar to those reported in Table 4 for bonus and equity compensation. For total compensation, rather than evidence of a reward to high CPS firms' CEOs, we find total compensation is maintained for high CPS firms' CEOs.

New CEOs hired from Outside the Firm

Murphy (2002) establishes that ex ante, CEOs that are hired from outside the firm should not have the board captive, and hence any preferential treatment observed for these CEOs may be due to their bargaining position as agents of change not necessarily power. We re-estimate our models after controlling for new CEOs coming from outside (inside) the firm and obtain virtually the same results as those reported in the text. We are reluctant to tabulate these results for collinearity concerns: a similar variable (i.e., New Boss, a dummy variable coded 1, if the CEO was in his/her first year in office, and 0 otherwise) was included in the layoff prediction modeled specified in footnote 13 and in the Appendix of the paper.

[19] Gompers et al. (2003) construct the g-score using data contained in the Investor Responsibility Research Center (IRRC). It considers 24 corporate governance provisions (shareholder rights provisions) for a large cross-section of firms, and g-score is the sum reflecting one point for the presence (or absence) of each provision. Hence, a lower g-score implies lower shareholder rights (CEO in more central position).

Analysis of Subsequent Operating Performance

We also examined future return on assets (ROA) and cash flow from operations (CFO) as alternate performance variables. In this analysis, we also control for variables posited to affect future operating performance such as lagged performance, capital intensity, R&D intensity, size and leverage. The results are similar to the market performance analysis: high CPS firms do not outperform low CPS firms. When operating cash flow is the performance variable, results suggest that while the performance of low CPS firms significantly improved, the performance of high CPS firms managed did not improve.

Multiple Layoff Firms

Some sample firms report layoff expenses in more than one year. We identify firms that report more than one layoff expenditure in our sample period (approximately 40 percent of the firms of the sample report more than one layoff expenditure) and re-estimate our models restricting the analysis to the initial layoff expense reported in the sample period. We classify initial/subsequent layoff expenditures following Adut et al. (2003). The results of this analysis are similar to those reported in the text but for a difference in sign for high CPS firms' mean performance. Finally, we find that the abhars generated by high CPS firms are negative while the abhars for low CPS firms are positive and significant, suggesting reported results are not driven by firms undertaking multiple layoffs.

Endogeneity

Our main models control for self-selection and potential endogeneity by including the Heckman variable (Inverse Mills ratio). We consider two additional tests that provide insight. First, we directly explore whether prior firm performance, the decision to layoff, and compensation changes are simultaneously determined.[20] Specifically, we construct 5 portfolios (quintiles) of firms based on lagged Tobin's Q.[21] We partition each quintile by layoff and non-layoff observations, and measure each compensation variable for the resulting ten subsets.[22] If the changes in compensation in layoff years we

[20] We thank an anonymous reviewer for highlighting this possibility to us.
[21] Quintile 1 (5) represents the portfolio of firms with the worst (best) Tobin's Q.
[22] For this test, non-layoff observations are all instances in Execucomp with complete data for the period (1992-2004) where firms did not report a layoff.

observe are entirely driven by poor performance, then little or no differences in compensation should be observed across layoff and non-layoff years in quintiles of poor performance (e.g., quintile 1, the worst performance quintile). Results suggest that in quintiles 1-4, bonus pay (the likelihood of getting zero bonus) is lower (higher) for layoff firm-year observations when compared to non-layoff firm-year observations. The results suggest that during periods of layoffs, bonus payments (the likelihood or getting zero bonus) are significantly lower (higher) regardless of performance, which is consistent with the notion that layoffs bring about potential outrage costs that translate into lower bonus (higher likelihood of getting zero bonus). We also document that the relative increase in equity compensation in layoff firm-year observations is significantly larger than the increase of equity compensation in non-layoff firm-year observations. Collectively, this evidence is consistent with our first set of hypotheses.

For the second test, we restrict the analysis to layoff firm-year observations only, and partition observations in each of the five quintiles of Tobin's Q into high and low CPS observations. Consistent with our second set of hypotheses, the results suggest that in spite of prior performance, high CPS firms protect their CEO's bonus compensation to a greater degree relative to CEOs in low CPS firms. Similarly, across performance portfolios, high CPS firms grant higher levels of equity compensation relative to firms with low CPS. This result is consistent with our second set of hypothesis. Collectively, while we cannot completely rule out the possibility that simultaneity is present in our analysis, our additional tests suggest that performance is not entirely responsible for the changes in compensation documented in this study.

Finally, we also re-estimate all the models presented in tables 3 and 4 after including a lagged version of the dependent variable (i.e., compensation). All inferences remained the same.

Do Compensation Changes due to Layoffs Reverse?

Our "on average" result is that that there is substitution from bonus to equity compensation during layoff years. In this section we consider whether such changes reverse or persist after layoff years. We partition our sample into three distinct periods: pre-layoff, during layoff and post-layoff firm-year observations. This analysis suggests that relative to years prior to the layoff, in the year of the layoff there is a

significant drop in bonus compensation and a dramatic increase in the likelihood of receiving zero bonus. However, when we contrast bonus compensation (the likelihood of getting zero bonus) from layoff years to post-layoff years, we find that bonus compensation (the likelihood of getting zero bonus) returns to normal (pre-layoff) levels. We also find that there is a significant increase in equity compensation from pre-layoff years to layoff years, but unlike bonus compensation, the increase in equity compensation persists in post-layoff years. This finding is consistent with Brookman et al. (2007b). We conduct similar analysis splitting the sample by high and low CPS firms and find similar patterns overall. However, the decline in bonus (increase likelihood of receiving no bonus) for low CPS firms is more dramatic than the decline for high CPS firms. The relative increase of equity compensation for both groups of firms is similar and also persists in post-layoff years.

6. Summary and Conclusions

We examine changes in CEO compensation associated with layoff intensity, anticipating that the controversial nature of both layoffs and executive compensation and the accompanying public and political pressures will motivate firms to make changes. We find evidence of substitution consistent with camouflage: while total compensation is unaffected, as layoff intensity increases, CEO compensation shifts toward equity compensation and away from bonus compensation. In considering the potential influence of CEO centrality, we find evidence of an association between layoff intensity and bonus reductions for CEOs of low CPS firms but slight bonus increases for CEOs at high CPS firms. Increasing layoff intensity is associated with equity compensation increases for CEOs of high and low CPS firms alike. Finally, analyses of sample firms' post-layoff performance reveal that, despite their CEOs' superior compensation, high CPS firms market performance subsequent to the layoff is not superior to that realized by low CPS firms. We believe this evidence suggests that high CPS firms' insulation of their CEOs from compensation decreases associated with layoff intensity cannot be attributed to a shareholder value maximizing choice reflective of efficient contracting and that the result is consistent with managerial power theory (Bebchuk et al. 2002).

Future research could expand our findings by considering additional explanations for the subsequent long-term performance for layoff firms. Farber and Hallock (1999) find the stated reasons for layoffs (1970-1997) explain some of the announcement period returns of layoff firms. The explanatory power of long-term performance models could be enhanced by taking into account the announced reasons for the layoffs (e.g., cost control, product competition, insufficient demand). Future work might also develop alternate measures of firms' exposure to political costs. Consistent with the approach in Core et al. (2007), press coverage could be measured by firm and CEO to construct measures of media pressure based on the volume and negativity of negative coverage. Differences in firms' responsiveness to regulatory actions on executive pay could be used to infer differences in firms' political costs.

Appendix – Probit Model underlying the Construction of the Heckman Variable

Probability (Layoff=1) = f (ROE $_{\text{3-yr average prior to layoff}}$, Industry-adjusted BHAR $_{\text{3 prior years}}$, Sales Growth $_{\text{from year t-1 to t}}$, Delta $_{\text{t-1}}$, New Boss, LN Sales $_{\text{t-1}}$ and Leverage $_{\text{t-1}}$ + error term).

The Decision to Layoff as a Function of Economic Determinants

	coef/(p-value)
ROE $_{\text{av 3 prior years}}$	-0.7770***
	(0.0000)
Ind_adjusted BHAR $_{\text{av 3 prior years}}$	-0.0722***
	(0.0013)
Sales Growth $_{\text{year t-1 to t}}$	-0.0000***
	(0.0066)
Delta $_{\text{(accumulated up to year t-1)}}$	0.0729***
	(0.0000)
New Boss	0.9369***
	(0.0000)
Ln Sales $_{\text{t-1}}$	0.1192***
	(0.0000)
Leverage $_{\text{t-1}}$	-0.0684
	(0.4396)
Intercept	-1.9637***
	(0.0000)
Number of observations	11,309
chi2	756.0814
Log Likelihood	-5291.2132
Adjusted R2	0.072

Note 1: *** p<0.01, ** p<0.05, * p<0.10
Note 2: all observations in Execucomp with available data for the period 1992-2004 were used in the estimation of this model.
Variable Definitions:
ROE = return on equity (data 123/lagged data60)
BHAR = buy-and-hold yearly market return (market return is defined as the firm's raw return-CRSP value-weighted index return)
Sales Growth = growth in sales (data12)
Delta = stock option value sensitivity to stock price (see variable definition in table 1)
New Boss = indicator variable coded 1 if it is the CEO's first year in office; and 0 otherwise.
Leverage = leverage (data9/data6).

REFERENCES

Aboody, D., M. Barth, and R. Kasznik. 2004. Firms' voluntary recognition of stock-based compensation expense. *Journal of Accounting Research* **42** 123-150.

Adut, D., W. Cready, T. Lopez, T. 2003. Restructuring charges and CEO compensation: A reexamination. *The Accounting Review* **78** 169-192.

Allen, M. P., S. K. Panian. 1982. Power, performance and succession in the large corporation. *Administrative Science Quarterly* **27** 538-547.

Anderson, R. C., J. M. Bizjak. 2003. An empirical examination of the role of the CEO and the compensation committee in structuring executive pay. *Journal of Banking & Finance* **27** 1323-1348.

Atiase, R. K., D. E. Platt, S. Y. Tse. 2004. Operational restructuring charges and post-restructuring performance. *Contemporary Accounting Research* **21** 493-522.

Balsam, S., A. Reitenga, J. M. Sanchez. 2007. Corporate restructurings and CEO compensation. Working paper, University of Arkansas.

Barber, B. M., J. D. Lyon. 1997. Detecting long-run abnormal stock returns: The empirical power and specification of test statistics. *Journal of Financial Economics* **43** (3) 341-372.

Bebchuk, L. A., M. Cremers, U. Peyer. 2006. CEO Centrality. Working paper, Harvard Law School.

Bebchuk, L. A., J. M. Fried, D. I. Walker. 2002. Managerial power and rent extraction in the design of executive compensation. *The University of Chicago Law Review* **69** (3) 751-846.

Black, E., M. Scholes. 1973. The pricing of options and corporate liabilities. *Journal of Political Economy* **81** 637-654.

Brookman, J. T., C. S. Chang, G. Rennie. 2007a. CEO Equity Portfolio Incentives and Layoff Decisions, *Journal of Financial Research* (2), 259-281.

Brookman, J. T., C. S. Chang, G. Rennie. 2007b. CEO cash and stock-based compensation changes, layoff decisions, and shareholder value. *The Financial Review*, forthcoming.

Bushman, R. M., A. J. Smith. 2001. Financial accounting information and corporate governance. *Journal of Accounting and Economics* **31** 237-333.

BusinessWeek, May 9, 1994. *The pain of downsizing*. 60.

Carter, M. E., L. Lynch, I. Tuna. 2007. The role of accounting in the design of CEO equity compensation. *The Accounting Review* (March) 327-358.

Chen, P., Mehrotra, R. Sivakumar, W. W. Yu. 2001. Layoffs, shareholders' wealth, and corporate performance. *Journal of Empirical Finance* **8** (2).

Collins, D. W., G. Gong, H. Li. 2008. Corporate governance and backdating of executive stock options. University of Iowa. Unpublished working paper.

Core, J., W. Guay. 1999. The use of equity grants to manage optimal equity incentive levels. *Journal of Accounting & Economics* **28** 151-184.

Core, J., W. Guay, D. Larker. 2007. The power of the pen and executive compensation. *Journal of Financial Economics*, forthcoming.

Core, J., R. Holthausen, D. Larker. 1999. Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics* **51** 371-406.

Dechow, P. M., M. R. Huson, R. G. Sloan. 1994. The effect of restructuring charges on executives' cash compensation. *The Accounting Review* **69** 138-156.

Dechow, P. 2006. Asymmetric sensitivity of CEO cash compensation to stock returns: A discussion. *Journal of Accounting and Economics* **42** 193-202.

De Pree, M., R. J. Mahoney. 1996. Backlash. *Across the Board* **33** (7) 24-30.

Defeo, V., R. Lambert, and D. Larcker. 1989. The executive compensation effects of equity-for-debt swaps. *The Accounting Review* **64** 201-227.

Dial, J., K. J. Murphy. 1995. Incentives, downsizing, and value creation at General Dynamics. *Journal of Financial Economics* **37** 261-314.

Dyck, A., L. Zingales. 2002. The corporate governance role of the media. CRSP working paper no. 543.

Elayan, F. A., G. S. Swales, B. A. Maris, J. R. Scott. 1998. Market reactions, characteristics, and the effectiveness of corporate layoffs. *Journal of Business Finance & Accounting* **25** (3&4), 329-351.

Fama, E. F., K .R. French. 1996. Multifactor explanations of asset pricing anomalies. *Journal of Finance* **51** (1) 55-84.

Farber, H. S. 2003. *Job loss in the United States: 1981-2001*. NBER Working Paper 9707.

Farber, H. S., K. F. Hallock.1999. *Have employment reductions become good news for shareholders? The effect of job loss announcements on share prices, 1970-1997*. NBER Working Paper 7295.

Financial Accounting Standards Board (FASB), 1995. Accounting for stock-based compensation. Statement of Financial Accounting Standards No. 123. Norwalk, CT.

Financial Accounting Standards Board (FASB), 2004. Share-based payment. Statement of Financial Accounting Standards No. 123R. Norwalk, CT.

Frederickson, J., F. Hodge, and J. Pratt. 2006. The evolution of stock option accounting: disclosure, voluntary recognition, mandated recognition and management disavowals. *The Accounting Review* **81** 1073-1093.

Froot, K.A. 1989. Consistent covariance matrix estimation with cross-sectional dependence and heteroskedasticity in financial data. *Journal of Financial and Quantitative Analysis* **24** 333-355.

Gaver, J. J., K. M. Gaver. 1998. The relation between nonrecurring accounting transactions and CEO cash compensation. *The Accounting Review* **73** 235-253.

Gompers, P., J. Ishii, A. Metrick. 2003. Corporate governance and equity practices. *Quarterly Journal of Economics* **118** 107-155.

Grinstein, Y., P. Hribar. 2004. CEO compensation and incentives: Evidence from M&A bonuses. *Journal of Financial Economics* **73** 119-143.

Hallock, K. F. 1998. Layoffs, top executive pay, and firm performance. *American Economic Review* 88 711-723.

Hanlon, M., S. Rajgopal, T. Shevlin. 2004. Are executive stock options associated with future earnings. *Journal of Accounting & Economics* **36** 3-43.

Hartzell, J. C., L. T. Starks. 2003. Institutional investors and executive compensation. *The Journal of Finance* **58** 2351-2374.

Healy, P., S-H. Kang. 1987. The effect of accounting procedure changes on CEOs' cash salary and bonus compensation. *Journal of Accounting & Economics* **9** 7-34.

Heckman, J. 1979. Sample selection bias as a specification error. *Econometrica* **47** 153-161.

Holmstrom, B. 1979. Moral hazard and observability. *Bell Journal of Economics* **13** 234–340.

Jensen, M., K. Murphy. 1990a. Performance pay and top management incentives. *Journal of Political Economy* **98** 225-264.

Jensen, M., K. Murphy. 1990b. CEO incentives – It's not how much you pay, but how. *Harvard Business Review* **68** 138-149.

Kothari, S. P., J. B. Warner. 1997. Measuring long-horizon security price performance. *Journal of Financial Economics* **43** (3) 301-340.

Leone, A., J. Wu, J. Zimmerman. 2006. Asymmetric sensitivity of CEO cash compensation to stock returns. *Journal of Accounting and Economics* **42** 167-192.

Lin, J. C., M. S. Rozeff. 1993. Capital market behavior and operational announcements of layoffs, operation closings, and pay cuts. *Review of Quantitative Finance and Accounting* **3** (1) 29-45.
Lopez, T. J. 2002. Evidence on the incremental information contained in the components of restructuring charges. *Journal of Business Finance & Accounting* **29** 613-659.
Lyon, J. D., B. M. Barber, C. Tsai. 1999. Improved methods for tests of long-run abnormal stock returns. *Journal of Finance* **54** (1) 165-201.
McCarroll, T. 1992. The shareholders strike back: Executive pay, *TIME*, May 4, 1992.
Mehran, H., G. E. Nogler, K. B. Schwartz. 1998. CEO incentives plans and corporate liquidation policy. *Journal of Financial Economics* **50** (3), 319-349.
Meredith, R. 1996. Executive defends downsizing. *The New York Times*, March 19, 1996.
Merton, R. 1973. Theory of Rational Option Pricing. *Bell Journal of Economics and Management Science* **4** 141-183.
Meyer, P. 1996. CEO pay vs. layoffs. *Barron's,* May 6, 1996, 66-67.
Mirrlees, J. A. 1976. The optimal structure of incentives and authority within an organization. *The Bell Journal of Economics* **7** (1) 105-131.
Murphy, K. J. 2002. Explaining executive compensation: Managerial power versus the perceived cost of stock options. *The University of Chicago Law Review* **69** (3) 847-869.
Murphy, K. 1999. Executive Compensation. In *Handbook of Labor Economics* (3) 2485-2463. Ashenfelter, O., Card, D. (Eds). Amsterdam: Elsevier.
Murphy, K. J. 1995. Politics, economics, and executive compensation. *University of Cincinnati Law Review* **63** (2).
Murphy, K., P. Oyer. 2003. Discretion in executive incentive contracts: Theory and evidence. Working paper available at SSRN: http://ssrn.com/abstract=294829.
Neter, J., M. Kutner, C. Nachtsheim, W. Wasserman. 1996. *Applied linear Statistical Models*, 4th edition, McGraw Hill.
Palmon, O., H. L. Sun. 1997. Layoff announcements: Stock market impact and financial performance. *Financial Management* **26** (3) 54-68.
Ross, S. 1973. The economic theory of agency: The principal's problem. *The American Economic Review* **63** (2) 134-139.
Sloan, A. 1996. For whom the bell tolls. January 15, 1996. *Newsweek*.
Sloan, A., A. Underwood. February 26, 1996. The hit men. *Newsweek* 127, 44-49.
White, H. 1980. A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroscedasticity. *Econometrica* **48** 817-830.
Worrell, D., N. D. Wallace, M. Sharma. 1991. Layoff announcements and stockholder wealth. *The Academy of Management Journal* **34** (3) 662-678.

Table 1 - Descriptive statistics for firms undertaking layoffs (583 firms over 1992-2004)

Panel A - Layoff Expenditures

	Layoff Firm Years (n=2,176)		
	mean	sd	median
Layoffs/ta	0.0114	0.0153	0.0061
Layoffs/bv	0.0168	0.2549	0.0149
Layoffs/adj earnings	0.1257	0.6111	0.0693

Panel B – Financial and other explanatory variables

	All Firm-Year Observations			**Non-Layoff Firm-Year Obs.**			**Layoff Firm-Year Obs.**		
	mean	sd	median	mean	sd	median	mean	sd	median
Cashcomp	899.562	930.358	672.572	908.402	968.441	671.085	885.148	864.698	673.306
Bonus	492.834	835.512	285.114	510.422	874.040	291.542	464.156	767.895	276.092
Zerobonus	0.165	0.371	0.000	0.126	0.332	0.000	0.229	0.420	0.000
Equity	2349.072	7972.838	791.338	2039.467	6236.481	661.606	2853.887	10169.560	1078.454
Total comp	3560.827	8402.180	1778.340	3217.693	6683.764	1623.664	4120.312	10601.920	2159.381
Adj earnings	0.062	0.126	0.060	0.076	0.135	0.071	0.038	0.103	0.041
Marketreturn	0.108	0.647	0.040	0.138	0.662	0.061	0.060	0.618	-0.003
CPS	0.415	0.163	0.408	0.406	0.164	0.399	0.430	0.161	0.425
Lnassets	7.256	1.674	7.170	7.127	1.692	7.038	7.467	1.622	7.360
Market/book	2.456	7.752	1.638	2.776	8.602	1.790	1.935	6.086	1.418
Tenure	7.482	6.930	5.000	8.078	7.410	6.000	6.511	5.942	5.000
Loss	0.151	0.358	0.000	0.080	0.271	0.000	0.267	0.443	0.000
Merger	0.150	0.357	0.000	0.132	0.338	0.000	0.179	0.384	0.000
Delta	0.748	0.186	0.792	0.747	0.199	0.797	0.750	0.164	0.784
Deviation	0.015	0.218	-0.001	0.022	0.241	0.003	0.005	0.176	-0.006
Cashshortfall	-0.177	0.156	-0.167	-0.193	0.163	-0.183	-0.150	0.141	-0.143
n	5,724			3,548			2,176		

Table 1 - Descriptive statistics (Continued)
Panel C - Compensation components: non-layoff firm year observations versus layoff firm year observations

	Non-Layoff Firm-Year Obs.			Layoff Firm-Year Obs.						
	mean	sd	median	mean	sd	median	**Mean Diff**		**Median Diff**	
Lncashcomp	6.492	0.861	6.510	6.449	0.976	6.514	-0.043	**	0.003	
Lnbonus	5.078	2.174	5.679	4.531	2.652	5.624	-0.548	***	-0.054	***
Zerobonus	0.126	0.332	0.000	0.229	0.420	0.000	0.103	***	0.000	***
Lnequity	5.606	2.929	6.496	6.130	2.824	6.984	0.524	***	0.488	
Lntotalcomp	7.921	1.073	7.880	8.171	1.123	8.232	0.249	***	0.353	***
n	3,548			2,176						

Panel D - Compensation components: non-layoff firm year observations versus layoff firm year observations – by CPS

	Non-Layoff Firm-Year Obs				Layoff Firm-Year Obs				Change due to Layoff			
	High CPS mean	Low CPS mean	**mean difference**		High CPS mean	Low CPS mean	**mean difference**		High CPS **mean diff**		Low CPS **mean diff**	
Lncashcomp	6.690	6.314	0.376	***	6.601	6.257	0.344	***	-0.089	***	-0.057	*
Lnbonus	5.498	4.703	0.795	***	4.989	3.956	1.034	***	-0.509	***	-0.747	***
Zerobonus	0.091	0.158	-0.067	***	0.172	0.300	-0.128	***	0.081	***	0.142	***
Lnequity	6.533	4.777	1.756	***	7.061	4.965	2.096	***	0.528	***	0.188	*
Lntotalcomp	8.331	7.555	0.776	***	8.549	7.696	0.853	***	0.218	***	0.141	***
n	1,676	1,872			1,210	966						

***,**,*, significance at the 1%, 5% and 10%, respectively (one-tail test when a directional prediction is made)

Table 1 - Descriptive statistics (Continued)
Panel E - Data and Definitions
Layoff expenditures were collected from footnotes in 10-Ks. These expenditures are typically reported as part of the non-recurring items/special charges footnote in the 10-K. We searched for variations of the following terms: "workforce reduction expenditures", "employee severance and termination benefits", "employee termination costs", "labor contraction/reduction costs" etc.

Layoffs/ta = layoff expenditures / lagged total assets (data6);
Layoffs/bv = layoff expenditures / lagged book value (data60)
Layoffs/adj earnings = = layoff expenditures / adjusted earnings

Cash Comp = in thousands of $; cash compensation as reported by Execucomp (field total_curr) and adjusted using CPI to 1984 constant dollars
Bonus = in thousands of $; bonus compensation as reported by Execucomp (field bonus)
Zerobonus = a categorical variable coded 1 if the CEO does not receive a bonus, 0 otherwise and adjusted using CPI to 1984 constant dollars
Equity = in thousands of $; sum of restricted shares and stock option value as reported by Execucomp (fields rrtkgrnt + option_awards_blk_value) and adjusted using CPI to 1984 constant dollars
Total Comp = in thousands of $; total compensation as reported by Execucomp (field tdc1) and adjusted using CPI to 1984 constant dollars

Adj_Earnings = adjusted earnings (data123+layoff expenditures) scaled by lagged total assets (data6)
CPS = CEO total compensation (field tdc1) / total compensation paid to the top five executives of the firm
CPSd = 1 if CPS exceeds median value of sample CPS (high CPS firms); 0 otherwise (low CPS firms)
Marketreturn = market-adjusted annual return (firm raw return - CRSP value weighted index return)
Lnassets = natural log of total assets (data6)
Market/book = market-to-book ratio [(data24*data25)/data60]
Tenure = number of years the CEO has been in office [defined using the BECAMECEO field in Execucomp]
Loss = 1 if the company reported a loss (i.e., data123<0), 0 otherwise
Merger = 1 if the company acquired another company (using SDC dataset), 0 otherwise
Delta = option value sensitivity to stock price. We follow Core and Guay (1999) and define the option delta as e^{-dt} *N(Z), where d (t) is the dividend yield (life of the underlying asset), N is the cumulative probability function of the normal distribution and Z is evaluated using the Black-Scholes model (Black and Scholes 1973) adjusted for dividends (Merton 1973).
Deviation represents the change in Delta from year t-1 to year t
Cashshortfall = 1 if the three-year average of [(common and preferred dividends (data19+data21) +cash flow from investing (data311)– cash flow from operations (data308))/total assets (data6)] is negative; 0 otherwise.

Table 2 - Correlation matrix - Pearson Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cash Comp	1.000															
Bonus	0.681	1.000														
Zerobonus	-0.519	-0.931	1.000													
Equity	0.219	0.154	-0.089	1.000												
Total Comp	0.572	0.396	-0.243	0.715	1.000											
Adj_Earnings	0.236	0.305	-0.262	0.047	0.137	1.000										
Layoffs/ta	-0.084	-0.071	0.038	-0.004	-0.061	0.008	1.000									
CPS	0.226	0.209	-0.169	0.435	0.466	0.083	-0.029	1.000								
Marketreturn	0.022	0.137	-0.130	-0.050	-0.043	0.116	0.011	-0.007	1.000							
Lnassets	0.491	0.332	-0.148	0.274	0.538	0.124	-0.188	0.123	-0.045	1.000						
Market/book	0.026	0.005	0.008	0.031	0.052	0.084	0.019	-0.015	0.084	0.015	1.000					
Tenure	0.045	-0.017	0.033	-0.102	-0.036	0.054	-0.014	-0.043	0.011	-0.011	0.034	1.000				
Loss	-0.290	-0.384	0.328	-0.062	-0.172	-0.612	0.192	-0.093	-0.084	-0.252	-0.073	-0.033	1.000			
Merger	0.191	0.155	-0.106	0.099	0.179	0.120	0.051	0.030	-0.002	0.201	0.058	0.026	-0.096	1.000		
Deviation	0.017	0.043	-0.049	-0.041	-0.027	0.009	-0.041	-0.067	-0.024	-0.006	-0.020	0.010	-0.010	-0.032	1.000	
Cashshortfall	-0.063	-0.141	0.146	-0.013	-0.031	-0.310	-0.037	-0.008	0.011	0.023	-0.051	-0.048	0.243	-0.100	-0.005	1.000

See Table 1, Panel E for variable definitions

Table 3 Regression Analysis (Fixed-Effects) of the Association between Layoff Expenditures and CEO Compensation

	Dependent Variable							
Independent Variable	I **Lnbonus**		II **Zerobonus**		III **Lnequity**		IV **Lntotal**	
Adj earnings	3.031	***	-2.061	***	3.911	***	1.55	***
	(4.27)		(-5.79)		(6.20)		(7.96)	
Layoffs/ta	-6.734	**	6.418	***	9.762	***	-0.589	
	(-2.07)		(2.87)		(3.80)		(-0.52)	
Marketreturn	0.438	***	-0.443	***	0.200	***	0.045	**
	(7.83)		(-8.84)		(3.01)		(2.22)	
Lnassets	0.191	***	-0.099	***	0.421	***	0.333	***
	(2.42)		(-3.81)		(3.74)		(11.03)	
Market/book	-0.006		0.004	*	0.023	**	0.015	***
	(-0.99)		(1.77)		(2.54)		(3.75)	
Tenure	-0.001		0.011	**	-0.015	*	0.009	***
	(-0.11)		(2.29)		(-1.63)		(3.61)	
Trend	0.773	***	-0.105		0.304	***	0.761	***
	(5.49)		(-1.01)		(9.29)		(19.10)	
Loss	-1.183	***	0.763	***	0.469	***	-0.047	
	(-7.20)		(9.54)		(3.40)		(-1.13)	
Merger	0.276	***	-0.270	***	0.651	***	0.067	**
	(3.24)		(-3.30)		(6.19)		(2.35)	
Heckman	-0.206		-0.004		-1.971	***	-0.524	***
	(-1.44)		(-0.03)		(-10.94)		(-10.59)	
Deviation					-0.480	***	-0.086	*
					(-2.95)		(-1.77)	
Cashshortfall					0.209		0.000	
					(1.40)		(-0.01)	
Intercept	2.795	***	-0.459		3.90	***	4.84	***
	(4.48)		(-1.48)		(4.78)		(22.20)	
Pseudo R Squared			0.119					
Chi2			457.660					
Log Likelihood			-2062.5					
Adjusted R Squared	0.382				0.388		0.687	
Model F	35.150				38.52		129.28	
n	5639		5639		5138		5210	
Firms	583		583		581		582	

t-statistic values are in parentheses.
Inferences are based on White (1980) standard errors corrected for within-panel dependence (Froot 1989).
See Table 1, Panel E for variable definitions

Table 4 - Regression Analysis (Fixed-Effects) of the Association between Layoff Expenditures and CEO Compensation, conditional on CPS

	Dependent Variable							
	I		II		III		IV	
Independent Variable	**Lnbonus**		**Zerobonus**		**Lnequity**		**Lntotal**	
Adj earnings	5.004	***	-3.753	***	3.557	***	1.392	***
	(9.48)		(-7.41)		(5.60)		(8.56)	
CPSd	0.297	***	-0.245	***	1.276	***	0.478	***
	(4.63)		(-3.45)		(13.03)		(23.60)	
Layoffs/ta	-13.378	***	12.819	***	7.991	***	-3.522	***
	(-3.27)		(2.82)		(2.56)		(-3.02)	
Layoffs/ta*CPSd	15.798	***	-16.592	***	-0.354		5.837	***
	(2.93)		(-2.27)		(-0.08)		(3.61)	
Marketreturn	0.617	***	-0.716	***	0.177	***	0.032	**
	(11.57)		(-10.10)		(2.87)		(2.00)	
Lnassets	0.359	***	-0.172	***	0.450	***	0.347	***
	(5.20)		(-5.60)		(4.24)		(14.93)	
Market/book	0.006		-0.008		0.025	***	0.016	***
	(1.56)		(-0.86)		(2.71)		(5.64)	
Tenure	0.008		-0.003		-0.027	***	0.005	***
	(1.11)		(-0.50)		(-2.89)		(2.90)	
Trend	1.002	***	-0.701	***	0.247	***	0.661	***
	(9.27)		(-4.90)		(7.69)		(24.49)	
Loss	-0.928	***	0.723	***	0.463	***	-0.043	
	(-6.37)		(7.45)		(3.48)		(-1.19)	
Merger	0.436	***	-1.172	***	0.623	***	0.066	***
	(7.29)		(-7.10)		(6.40)		(2.78)	
Deviation					-0.423	***	-0.064	*
					(-2.71)		(-1.46)	
Cashshortfall					0.208	*	0.000	
					(1.45)		(0.00)	
Heckman	-0.222	*	0.065		-1.885	***	-0.491	***
	(-1.87)		(0.50)		(-11.09)		(-12.93)	
Intercept	1.079	**	0.807	**	3.269	***	4.649	***
	(2.07)		(2.15)		(4.17)		(4.65)	
Pseudo R Squared			0.214					
Chi2			457.660					
Log Likelihood			-1479.15					
Adjusted R Squared	0.479				0.432		0.734	
Model F	64.540				48.45		262.97	
n	5317		5317		5138		5210	
Firms	583		583		581		582	

t-statistic values are in parentheses.
Inferences are based on White (1980) standard errors corrected for within-panel dependence (Froot 1989).
See Table 1 for variable definitions

Table 5 - Analysis of Future Abnormal Stock Performance

Panel A - Industry-Adjusted Buy-and-Hold Returns

	All Obs						High CPS			Low CPS				
Variable	**Mean**		**sd**	**bottom third**	**upper third**	**n**	**Mean**		**sd**	**Mean**		**sd**	**Mean Diff.**	
Ind-Adj bhars $_{(t+1)}$	7.13%	***	60.36%	-12.32%	11.37%	1,920	5.14%	***	58.18%	9.68%	***	62.97%	-4.54%	*
Ind-Adj bhars $_{(t+2)}$	9.58%	***	71.21%	-19.26%	13.70%	1,908	7.31%	***	69.04%	12.49%	***	73.85%	-5.18%	*
Ind-Adj bhars $_{(t+3)}$	8.31%	***	78.96%	-25.74%	11.93%	1,880	5.87%	***	73.95%	11.45%	***	84.93%	-5.57%	*
Ind-Adj bhars $_{(t+4)}$	8.34%	***	79.93%	-29.30%	13.64%	1,577	2.47%	***	70.31%	16.18%	***	90.68%	-13.71%	***
Ind-Adj bhars $_{(t+5)}$	5.72%	***	86.28%	-33.72%	10.19%	1,259	2.73%	***	82.10%	9.77%	***	91.58%	-7.04%	*

Panel B - Abnormal Buy-and-Hold Returns (Barber and Lyon, 1997)

	All Obs						High CPS			Low CPS				
Variable	**Mean**		**sd**	**bottom third**	**upper third**	**n**	**Mean**		**sd**	**Mean**		**sd**	**Mean Diff.**	
Ab. bhars $_{(t+1)}$	4.46%	***	44.69%	-3.58%	3.77%	1,920	3.94%	***	44.66%	5.13%	***	44.74%	-1.18%	
Ab. bhars $_{(t+2)}$	6.10%	***	57.74%	-11.79%	8.80%	1,908	5.67%	***	58.43%	6.65%	***	56.88%	-0.99%	
Ab. bhars $_{(t+3)}$	6.27%	***	65.36%	-16.62%	10.44%	1,880	4.10%	***	56.00%	9.08%	***	75.68%	-4.98%	*
Ab. bhars $_{(t+4)}$	6.63%	***	68.14%	-20.35%	11.44%	1,577	3.37%	***	55.85%	10.98%	***	81.56%	-7.60%	***
Ab. bhars $_{(t+5)}$	5.93%	***	71.76%	-24.32%	12.00%	1,259	3.80%	***	62.23%	8.82%	***	82.94%	-5.01%	

Panel C - Future Risk-Adjusted Returns

	All Obs						High CPS			Low CPS				
Variable	**Mean**		**sd**	**bottom third**	**upper third**	**n**	**Mean**		**sd**	**Mean**		**Sd**	**Mean Diff**	
Perform$_{t+3}$	6.31%	***	62.30%	-13.33%	14.44%	1,880	4.00%	***	44.60%	9.28%	***	79.41%	-5.28%	***
Perform$_{t+5}$	6.50%	***	44.71%	-10.81%	14.89%	1,259	6.05%	***	36.59%	7.10%	***	53.85%	-1.05%	
Perform $_{t+1 \text{ to } t+3}$	8.43%	***	31.06%	-2.80%	12.24%	1,880	6.60%	***	27.98%	10.80%	***	34.50%	-4.20%	***
Perform $_{t+1 \text{ to } t+5}$	5.77%	***	21.46%	-1.94%	8.30%	1,259	4.90%	***	21.28%	6.95%	***	21.66%	-2.05%	**

New Variable Definitions

Ind-Adj bhar $_{it+n} = R_{it+n} - R_{indt+n}$ (industry benchmark) Ab. bhars $= R_{it+n} - R_{pt+n}$ (benchmark portfolio)

Perform = $R_{it} - R_{ft}$ monthly value weighted market return minus the risk free rate of return.

Table 6 Regression Analysis of the Association between Layoff Expenditures and Future Performance, conditional on CPS

	Dependent Variable			
	I	II	III	IV
Independent Variable	**Perform$_{t+3}$**	**Perform $_{t+1 \text{ to } t+3}$**	**Perform$_{t+5}$**	**Perform$_{t+1 \text{ to } t+5}$**
CPSd$_t$	-0.029	-0.033	0.014	-0.004
	(-0.83)	(-1.60)	(0.37)	(-0.44)
Layoffs/ta$_t$	4.423 ***	2.446 **	0.803	0.827 **
	(3.72)	(1.82)	(0.57)	(2.50)
Layoffs/ta * CPSd$_t$	-1.676	-0.326	-0.165	-1.072 **
	(-0.96)	(-0.20)	(-0.10)	(-2.23)
Marketreturn$_{t+n}$	0.780 ***	0.995 ***	0.705 ***	0.460 ***
	(4.02)	(4.85)	(3.34)	(2.54)
SMB$_{t+n}$	0.572 ***	0.938 ***	0.498 **	0.287 *
	(3.18)	(4.98)	(2.03)	(1.67)
HML$_{t+n}$	0.212	0.600 **	0.302	0.169
	(0.96)	(2.25)	(1.33)	(0.73)
Momentum$_{t+n}$	-0.191	0.197	-0.248	-0.164
	(-0.88)	(0.87)	(-0.94)	(-1.01)
Intercept	-0.051	-0.108 **	-0.033	-0.005
	(-0.91)	(-1.93)	(-0.59)	(-0.10)
High CPS CEOs coefficient	2.747 **	2.120 *	0.638	-0.245
(layoffs/ta+layoffs/ta*CPSd)	(4.54)	(3.26)	(0.37)	(0.48)
Adjusted R Squared	0.076	0.072	0.062	0.047
Model F	23.130	22.730	13.620	8.840
n	1880	1880	1259	1259

t-statistic values are in parentheses
Inferences are based on White (1980) standard errors corrected for within-panel dependence (Froot 1989).

See Table 1, Panel E for variable definitions

New Variable Definitions
SMB = the performance of small stocks relative to big stocks (SMB, Small Minus Big)
HML = the performance of value stocks relative to growth stocks (HML, High Minus Low)
Momentum = difference in returns on portfolios of past (6 months ending in month t-1) winners and losers, where winners are the top quintile and losers are the bottom quintile of stocks