

DO CEOs EXPECT (AND DO THEY RECEIVE) PAYOFFS FROM LAYOFFS?
AN EXAMINATION OF THE RELATIONSHIP BETWEEN CEO RELATIVE PAY AND
LAYOFFS

By

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ABSTRACT OF THE THESIS

Do CEOs Expect (and Do They Receive) Payoffs from Layoffs? An Examination of the Relationship Between CEO Relative Pay and Layoffs

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Executives, boards of directors, and compensation consultants actively use peer comparisons for constructing compensation benchmarks. However, the implications associated with relative measures of executive compensation have received little attention from the executive compensation research to date. Social comparison, tournament, and prospect theories are used to develop hypotheses concerning the relationship between CEO relative total compensation and layoffs. Utilizing a sample of large, publicly traded companies, I test hypotheses predicting future layoff announcements as a function of CEO relative total compensation. I find that CEOs receiving compensation below their annual industry median are significantly more likely to engage in layoffs than their peers at or above the industry median. Similarly, firms performing below the annual industry median are also more likely to announce future layoffs in the following year. Additional results indicate that while previously under-performing firms benefit from layoffs in terms of increased performance in the following year, executives receiving compensation below the annual industry median and engage in layoffs do not see similar increases in the following year.

Acknowledgement and Dedication

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INTRODUCTION

In the research literature on executive compensation (e.g., studies of the link between pay and firm performance--Boschen & Smith, 1995; Core, Holthausen, & Larcker, 1999; Hall Jensen & Murphy, 1990; Mehran, 1995; Rosen, 1992) scholars have almost exclusively focused on the absolute level of total pay or of individual components of CEO pay. However, social comparison theory (Festinger, 1954; O'Reilly, Main, & Crystal, 1988) suggests that one's environment becomes important as he begins to compare his status with those around him. Concerned with their ranking among their peers, executives may construct their own social comparisons with other executives, which is likely one reason that boards of directors and compensation consultants actively use peer comparisons for constructing compensation benchmarks (Deckop, 1988; Finkelstein & Hambrick, 1988; Fulmer, 2009). These perceptions of social comparison are likely to influence their behaviors and actions aimed at increasing their standing among their peers (O'Reilly, Main, & Crystal, 1998). While the notion that individuals evaluate their compensation relative to their peers seems logical, a review of the CEO literature reveals little research on the role of such comparisons among executives. Here, I argue that executives' relative standing is likely to influence behaviors and actions aimed at increasing their relative standing among peers.

Compensation structured for the alignment of interest between executives and owners (Ang, Cole, & Lin, 2000; Fama & Jensen, 1983; Eisenhardt, 1989; Jensen & Meckling, 1976) suggests executives should make decisions based on what is anticipated to be in the interest of the firm. As a result, decisions regarding the well-being of the firm are not completely separate from those concerning an executive's own well-being. However, the literature concerning power has posited that executives may garner a significant amount of power that affords them the

ability to make decisions that potentially sacrifice the well-being of the firm for their own (Bebchuk & Fried, 2005; Brookman, Chang, and Rennie, 2007; Devers, Cannella, Reilly, & Yoder, 2007). One way in which executives may seek to increase their well-being may be through perceived financial gains associated with layoffs at the firm.

Layoffs—the permanent or temporary termination of a significant portion of a firm’s employees from payroll—largely emerged as an organizational phenomenon in the 1970s as firms began to respond to reductions in consumer demand by reducing their workforce (Bruton, Keels & Shock, 1996; Chen, Mehrotra, Sivakumar, & Yu, 2001; Worrell, Davidson & Sharma, 1991). A recent review of the ongoing debate among scholars has emerged regarding the implications of layoffs for firm performance (Datta, Guthrie, Basuil, & Pandey, 2010). The relationship between layoffs and executive compensation has received significantly less attention (Flanagan & O’Shaughnessy, 2005; Yu & Park, 2006). Specifically, few studies have explored changes in executive compensation surrounding layoffs (Brookman, Chang, and Rennie, 2007; Hallock, 1998; Henderson, 2010).

The current paper examines the roles of relative executive compensation and of firm performance as predictors of layoff announcements. I begin by using social comparison, tournament, and prospect theories to develop hypotheses about the relationship between CEO relative compensation and layoffs. Next, I explore whether measures of firm performance and executive compensation, relative to the annual industry median, predict the likelihood a firm will engage in layoffs. Specifically, I will test whether firms performing, and executive receiving compensation, below annual industry median are more likely to announce layoffs in the following year, relative to peers at or above the median. Following this, I will examine the impacts of such layoffs in firm performance and relative compensation in the year following the

layoff announcement. Additional analyses are presented on the basis of robust econometric estimation techniques to ensure the results are both reliable and consistent.

The key contributions of this research are twofold. First, this study makes a theoretical contribution by extending the compensation literature beyond the intra-firm theories that dominate much of the work on executive compensation and firm performance (i.e., agency theory, power). By focusing on *relative* CEO pay, the current study seeks to incorporate outside labor market influences on an executive's decision to engage in layoffs. Relative CEO pay is conceptualized as a new driver of motivation and behavior at the executive level. Such relative measures may account for behaviors and actions beyond what has been explained in past studies. This study also contributes to the behavioral agency theory models (Wiseman & Gomez-Mejia, 1998) by exploring the implications such social comparisons have on the motivations surrounding decisions at the executive level.

THEORETICAL BACKGROUND AND HYPOTHESES

Firm performance and layoffs

Layoffs offer one strategic response to rising labor costs or increased competitive market pressures to improve overall operating efficiency. General agreement across the layoff literature suggests firm performance plays a crucial role in downsizing decisions (Datta et al., 2010). Two general hypotheses have been developed to explain why both poorly- as well as well-performing firms are likely to engage in layoffs.¹ The *decreased demand hypothesis* refers to the situation in which a firm responds to a decrease in demand for goods and services they provide through

¹ Worrell, Davidson, and Sharma (1991) argue that layoff decisions can be partitioned into responses to their financial distress or restructuring and consolidation efforts.

workforce reductions.² Not surprisingly, business downturns, combined with possible declines in demand for goods and services provided by the firm, tend to create financial pressures alleviated through workforce reductions (Budros, 1997). As such, announcements of workforce reductions may also serve as a signal to investors that the firm both recognizes and is responding to declining demand (Hallock, 1998). The decreased demand hypothesis offers an economic argument based on the assumption that executives seek to reduce organizational costs while simultaneously protecting or increasing financial performance in response to a market uncertainty and fluctuations associated with decreases in demand (De Meuse et al., 2004).

Conversely, the *pure efficiency hypothesis* suggests that, rather than as a response to decreases in demand, layoffs may also serve as a strategic response by firms as a means of achieving increased productivity. While the performance implications of layoffs across the two hypotheses are similar, the latter hypothesis seeks to improve financial performance through the reduction of organizational slack—a focus on resources in excess of what is required to achieve the same or higher levels of production (Bourgeois, 1981; Cyert & March, 1963; Love & Nohria, 2005). The perception that firms engage in layoffs as a means of ‘cutting the fat’ from operations and that necessary outputs can be produced with fewer resources has been well-articulated throughout the strategy literature (Baumol, Blinder, & Wolff, 2003; Caves et al., 1993; Love & Nohria, 2005).

Organizations are not required by law to state the cause for layoffs. Many of these decisions are made public through small, vague announcements disclosing the percentage of the workforce impacted as well as the timeframe for implementation. Scholars have relied upon subjective interpretations of layoff announcements as a means of investigating the moderating

² Many of the layoffs that occurred throughout the 1980s were attributed to such adverse market conditions. However, layoffs continued despite economic growth and improvements in business conditions. (Guthrie & Datta, 2008).

effect the reason for the layoff has on the relationship between the layoff and future firm performance (Franz, Crawford, & Dwyer, 1998; Lee, 1997; Linn & Rozeff, 1993; Palmon, Sun, & Tang, 1997). However, prior poor firm performance is likely to predict an increased likelihood of future layoff announcements, irrespective of the rationales described above. Due to the subjective nature associated with delineating the exact cause of layoffs combined with either explanation likely to be aimed at improving future firm performance, the study presented here refrains from categorizing announcements through subjective assessments of the cause.

Theoretically, the relationship between firm performance and layoffs would seem to be straightforward—declines in firm performance are likely to be associated with an increased likelihood of layoffs. Empirically, however, studies have failed to provide consistent results concerning the magnitude and strength of the relationship. Ahmadjian and Robinson (2001) found a negative relationship between absolute level of return on assets (ROA, hereafter) and the likelihood of layoffs. Utilizing a similar sample of Japanese firms, Kang and Shivdasani (1997) found the likelihood of layoffs increased among Japanese firms with lower industry-adjusted ROA. Computing changes in ROA relative to the 10-year historical standard deviation of ROA for firms in the same industry, Perry and Shivdasani (2005) found changes in ROA were not significantly related to the likelihood of future layoff announcements. While research on the performance to layoff relationship has been mixed, conceptually, relative firm performance might be a strong predictor of future layoffs.

Work in behavioral decision theory and risk taking suggests that firms adjust their performance to industry benchmarks (Fiegenbaum & Thomas, 1988). Decisions to engage in layoffs may be influenced by certain targets or benchmarks managers and executives use to evaluate their decisions (Bamberger & Fiegenbaum, 1996). Specifically, median industry

performance serves as a strategic benchmark and target used by executives and shareholders to gauge a firm's relative performance (Fiegenbaum & Thomas, 1988). Relative measures of firm performance provide context to absolute measures of firm performance. Here, it is hypothesized that firms performing below their industry median are more likely to announce future layoffs, whereas those performing at or above the median are less likely to announce layoffs in the future

Hypothesis 1: Firms are more likely to announce layoffs following a period in which they perform below the industry median, relative to firms who perform at or above the industry median.

Relative CEO pay and layoffs

Concerned with the problems that arise through the separation of ownership and control, agency theorists have argued for performance-based compensation (Eisenhardt, 1988, 1989; Jensen & Murphy, 1990; Lawler, 1971). Many of these studies have focused on the implications associated with varying levels of performance-based compensation packages received by CEOs (Jensen & Murphy, 1990; Tosi & Gomez-Mejia, 1989). Within these studies, scholars have assumed the maximization of shareholder wealth as the main objective associated with an executive's role. Though empirical studies have produced results suggesting a positive and statistically significant relationship between an executive's pay and firm performance, these findings only explain a very small portion of the total variance in executive compensation (Belliveau, O'Reilly, & Wade, 1996). Such limited findings may be attributed to the over-reliance of models based on agency-based economic theory in explaining executive pay and behavior (O'Reilly, Main, & Crystal, 1988). While many of the models emanating out of the agency literature assume incentive alignment is the main driver of executive actions, other labor

market models allow for additional factors to influence the behaviors and actions of executives (Finkelstein & Hambrick, 1988; Fulmer, 2009).

Non-agency factors offered by economists, psychologists, and behaviorists (i.e., equity, fairness, culture) offer alternative determinants and influences on CEO compensation (Baker, Jensen, & Murphy, 1988). From a social and psychological perspective, O'Reilly and colleagues (1988) proposed a model of CEO compensation through a combination of tournament and social comparison models. Using both tournament and social comparison theories, relative standing can be used describe an individual's perceived status relative to that of others in a proximate social setting (Frank, 1985; Hambrick & Cannella, 1993). Individuals are likely to select their reference group as being comprised of others who are perceived as being slightly better or of a higher ability (O'Reilly, Main, & Crystal, 1988). Such social comparisons will likely have an influence on an individual's beliefs and future behaviors (Festinger, 1954). Paying very close attention to their own status as well as their compensation relative to their peers, social comparisons made between executives have been argued to be one of the crucial non-economic factors influencing executive behavior (Belliveau, O'Reilly, & Wade, 1996; Crystal, 1999; Deckop, 1988; Finkelstein & Hambrick, 1988). Such comparisons can be described as one of the main contributors to the perspective of CEO compensation as a tournament between executives.

Social comparison among executives may result in perceptions of a tournament as executives begin focusing on relative differences in pay—either in terms of their own pay over time or their pay relative to their peers. Competition among executives to advance in the tournament may be reflected in their tolerance for risk when making decisions. Prospect theory offers an explanation as to why an individual's relative position in a tournament is likely to influence his/her actions and behaviors. Prospect theory posits that as an individual advances

through the tournament, he becomes less tolerant and more adverse to risk as the balance between potential gains and losses facing individuals change as a function of his standing in the tournament (Kahneman & Tversky, 1979). In other words, those individuals ranking lower in the tournament have much more room to advance, and less room to fall, whereas those higher in the rankings are plagued by having much more room to fall with less room for advancement. Together, social comparison, tournament, and prospect theory suggest that executives' perceptions of their rank among their peers at other firms will influence their behaviors as they seek to advance through the pay ranks. As opposed to changes in the absolute level or changes compared to own pay from the previous year, the model developed here proposes that executives evaluate total compensation relative to their peers in the same industry.

While possibly motivated to advance in their relative standing amongst their peers, executives are also responsible for maximizing shareholder wealth. As suggested by agency theory, compensation based on firm performance, should provide incentives for executives to both maximize shareholder wealth *and* increase their absolute compensation. However, poor corporate governance, incomplete contracts, and asymmetric information may allow for executives to pursue objectives aimed at increasing their compensation relative to peers, possibly even at the expense of firm profitability (Tosi & Gomez-Mejia, 1989; Williamson, 1964). Layoffs offer one such mechanism for achieving these objectives.

Despite an extensive literature focused on the influence of executive compensation (Boschen & Smith, 1995; Lilling, 2006; Matolscy, 2000) and of layoffs (Bruton, Keels, & Shook, 1996; Cascio, Young, & Moris, 1997; Kang & Shivdasani, 1997; Linn & Rozeff, 1993) on firm performance, only a few studies have looked at the interrelation between these three variables (see Table 1 for a summary) In their examination of the relationship between firm

performance, executive compensation, and layoffs, Brookman, Chang, and Rennie (2007) focused on changes in CEO cash and stock-based compensation in the years surrounding layoffs. The authors explore whether these changes persisted into the future or remained one-time fluctuations. In a sample spanning six years (1993-99), Brookman and colleagues (2007) found total compensation for CEOs of firms announcing layoffs to be no higher in the year preceding the layoffs, 9.3% higher in the year of the layoffs, and a surprising 22.8% higher in the year following the layoffs. This result suggests that while compensation did not differ between the firms prior to the layoffs, differences did emerge in the years following the layoffs. While the failure to find differences prior to an announcement suggest potential differences in motives when deciding to engage in layoffs, the differences in pay post-announcement offer some evidence for the expected payoff associated with such decisions. However, the analysis focused on absolute changes in executive compensation between those who announced a layoff and the pay of the CEO of a matched sample firm, rather than in changes in compensation relative to all other executives in the industry. This approach fails to take into account the unique effects relative changes in compensation have with layoff decisions. Additionally, the authors tested their hypotheses on either difference-in-means tests or regressions in which executive compensation was regressed upon either dummy variables to represent layoff years or firm performance and characteristics. As a result, no empirical studies have tested executive compensation or anticipated changes in compensation as a direct predictor of future layoff announcements.

Both prospect and tournament theories posit that comparisons among individuals drive or deter certain behaviors. Reference points, such as industry benchmarks (i.e., mean, median) serve as meaningful components used by individuals when comparing compensation to peers'

(Brown, Gardner, Oswald, & Qian, 2005; Mas, 2006). Lower relative standing will provoke certain behaviors and actions aimed at advancing in relative standing. Consistent with these arguments, relative industry differences in executive compensation are likely to be associated with a layoff announcement. The industry median is used as a means to benchmark key variables for the purposes of discerning whether observations fall below or above industry standard. Using the industry median as a reference point, I hypothesize that executives who receive compensation placing them lower among other executives in the industry are likely to be motivated to increase their compensation and relative standing. Therefore, these executives are more likely to engage in layoffs (as a means of increasing their pay), relative to those who receive compensation above the median.

Hypothesis 2: CEOs are more likely to announce layoffs following a period in which they receive compensation below the industry median, relative to CEOs receiving compensation at or above the industry median.

Influence of layoffs on firm performance and CEO pay

The impact of layoffs on firm performance and executive compensation has been a popular topic among scholars in the field of finance and economics. So-called event-study analyses have been widely adopted to analyze shareholder reactions to layoff announcements (Chen et al., 2001; De Meuse et al., 2004; Farber & Hallock, 1999; Nixon et al., 2004; Wayhan & Werner, 2000). While the breadth of research on the topic offers insights into the mechanisms linking layoffs with future firm performance, much of the work is limited by the narrow focus on short-term financial and equity performance of the firm.

A review of the layoff literature reveals an abundance of studies investigating the influence layoffs have on organizational ROA. Studies using ROA as an organizational outcome have provided little consistency in terms of temporal considerations. As a result, the field has been able to infer that layoffs have a negative effect (Cascio & Young, 2003; Cascio, Young, & Morris, 1997; DeMeuse, Vanderheiden, & Bergmann, 1994; DeMeuse, Bergmann, Vanderheiden, & Roraff, 2004; Guthrie & Datta, 2008), positive effect (Chalos & Chen, 2002; Chen, Mehrotra, Sivakumar, & Yu, 2001; Yu & Park, 2006), as well as no impact (Bruton, Keels, & Shook, 1996; Love & Nohria, 2005; Perry & Shivdasani, 2005) on subsequent ROA. Such divergent results have been used to justify the perception that layoffs increase, decrease, or have no impact on future firm performance (Cascio et al., 1997; Chen et al., 2001; Guthrie & Datta, 2008).

Though accounting measures of firm performance provide useful measures as to the health and overall performance of the firm, these absolute measures themselves fail to indicate the position of the firm in their respective industry. Relative measures of firm performance provide context for understanding and interpreting absolute measures. Therefore, the work presented here will adjust organizational performance by median performance of each respective industry. Facing increased pressure by investors to improve performance, under-performing firms are more likely to announce layoffs as a means of addressing investors' concerns. Firm performance is likely to increase more among firms who announced a layoff at a time in which they performed below the industry median, relative to their peers at or above the median.

Hypothesis 3a: Post-layoff announcement organizational performance will increase more for firms that performed below the annual industry median, relative to those who performed at or above the annual industry median prior to the layoff announcement.

Some executives may engage in layoffs as a result of perceiving themselves as being undercompensated, relative to their peers in the industry. However, some stakeholders have called for organizations to decrease CEO compensation following such announcements as a means of continued representation of shareholder interests as well as combating negative public sentiment (Henderson et al., 2010). Such competing forces could result in increases in relative compensation for some executives, while others face pressure to take pay-cuts. Therefore, in addition to investigating organizational performance implications associated with layoff announcements, the work presented here seeks to examine the impact such announcements have on executive compensation.

Hallock (1998) examined whether CEOs at firms announcing layoffs are more likely to receive increases in compensation, in terms of absolute level, in the following year. Using data collected on 550 of America's highest paid executives over a seven year period (1989-1995), the results indicate that after controlling for factors explaining CEO pay across firms, CEO pay remains relatively unchanged in the years following layoffs. Since Hallock (1998), several scholars have sought to investigate whether executive compensation increases in the period following layoffs. Examining the changes in CEO compensation associated with 229 layoff announcements, Brookman and colleagues (2007) obtained results that suggested CEO compensation increased following layoffs. Estimated against a matched sample of organization, these increases were found to persist in the years following the announcement of the layoffs. Specifically, they found CEO total pay to be 22.5% higher in the two years following the announcement, and 41.3% higher thereafter. The authors estimate that investors also stand to gain between \$40 and \$95 million during the full period. Contrasting the results obtained by

Hallock (1998), these results suggest that CEOs stood to earn higher total pay in the years following layoff decisions.

More recently, Henderson (2010) sought to extend the work by Hallock (1998) and Brookman et al. (2007) by examining changes in the structure and composition of CEO compensation in the years following layoffs. This differed from previous studies where the focus tended to be on total pay or level of guaranteed pay. Utilizing a panel of 588 S&P 500 firms reporting layoff expenditures during the years of 1992-2004, the results provided some support but also challenged the findings of previous studies. As layoffs increased in severity, CEO bonus compensation tended to decrease while their equity-based compensation simultaneously increased. Such changes were argued to represent direct and explicit strategies aimed at either camouflaging attempts at increasing CEO pay (managerial power theory) or to further align CEO incentives with those of investors (agency theory) (Henderson, 2010).

The studies by Henderson (2010), Brookman et al. (2007), and Hallock (1998) all examine changes in CEO pay relative to pre-layoff pay. While these works were influential in our understanding of the relationship between executive compensation and layoff announcements, no study has tested the ability of *market-relative* CEO pay to predict the likelihood of future layoffs. Earlier, I posited that executives who receive compensation below that of their peers were also more likely to engage in layoffs. It is also likely that the effects of these actions on relative compensation are strengthened for executives receiving compensation below the annual industry median, relative to those who received compensation above the industry median. In other words, the relationship between layoffs and subsequent relative compensation is hypothesized to be a function of past relative compensation.

Hypothesis 3b: Post-layoff announcement CEO compensation will increase more for those receiving compensation below the annual industry median, relative to those receiving compensation above the annual industry median prior to the layoff announcement.

METHODS

Data sources and sample

The hypotheses developed here were tested using a sample constructed through data contained in the COMPUSTAT, EXECUCOMP, and Factivia databases. Three different sectors, each with its own S&P500 Dow Jones index, were isolated for analysis: (i) consumer staples, (ii) financials, and (iii) information technology. The final sample consisted of 150 companies. Layoff announcements were collected for each company over the period 1990 to 2013. This allowed for multiple layoff announcements for each firm over the sample period. For the analyses predicting layoffs, CEO departures were allowed for each firm prior to any layoff announcements (Hypothesis 1 and 2). To test the impact of layoffs on firm performance (Hypothesis 3a) and CEO relative pay (Hypothesis 3b), the sample was restricted to only include the CEO present at the time the layoff was announced. Subsequent CEO appointments were removed to allow for a direct comparison between pay prior to and following the announcement for the same individual CEO. As a result, a total of 1,714 firm years were included in the final sample—354 consumer staple, 661 information technology, and 699 financial service firm years.

Although some studies have recorded layoff announcements using any declines in employment levels at a firm (Bruton, Keels, & Shook, 1996), this methodology was dismissed

due to the possibility of declines being associated with divestiture of a unit or sub-division of the organization, rather than layoffs. Layoff announcements made in either the Wall Street Journal or New York Times were accessed using media database Factivia. Consistent with the layoff literature, specific search terms were selected and used across each organization in the sample.³ Annual layoff figures were indexed so as to account only for the total number of annual layoffs announced for a given firm. Using an approach employed by Nixon et al. (2004) to ensure the accuracy of these announcements, articles obtained from the Wall Street Journal were corroborated using articles from the New York Times.⁴ Announcement dates are recorded as the date in which the media report was released detailing the layoffs or reductions planned for the current year (future or past layoffs were dated accordingly). In total, 196 layoff announcements were included in the final sample.

Due to the nature of longitudinal data on organizations, several challenges emerged regarding the stability and consistency of the organizations. Despite an abundance of research collecting layoff data through media reports, few scholars have accounted for mergers, acquisitions, and changes in organizational structure. Workforce reductions that were either temporary or associated with pure divestiture (i.e., selling of a unit) were not regarded as layoffs. Consistent with the layoff literature, layoff figures collected through media reported were validated through a comparison against changes in employment levels for each organization by year (Love & Nohria, 2005).

³ Search terms included “layoff(s),” “Job cut(s),” “downsizing,” “eliminate,” “cut,” and “slash”.

⁴ See Love and Nohria (2005) for a similar approach.

Variables

Layoff Announcement data collected through announcements made in either the *Wall Street Journal* or the *New York Times* were operationalized in two different ways. First, to test hypotheses 1 and 2, layoffs were coded as a dummy variable equal to one if a layoff was announced for that organization for each year, and as zero otherwise. To test for firm-level and executive outcomes (H3a & H3b, respectively), layoffs were transformed into the percentage of employees laid off (number of employees affected by the layoff divided by the total number of employees at the organization). As a result, operationalization was driven by both theoretical considerations and for consistency with the layoff literature (De Meuse et al., 2004; Nixon et al., 2004).

CEO Compensation figures were obtained through Execucomp. Total compensation for an individual year is comprised of the following components: base salary, bonus, other annual compensation, total value of restricted stock granted, total value of stock options granted (using Black-Scholes), long-term incentive payouts, and all other forms of total pay.⁵ Total compensation was then transformed into a relative measure by subtracting the median total compensation by year and industry for each executive. Annual industry median was computed as the median pay received by executives for firms in each of the industries included in the sample. The three industries included were operationalized through S&P/SIC codes in both Compustat and Execucomp.⁶ A review of the compensation literature confirmed no empirical investigation using annual industry adjusted compensation for executives.

⁵ Total compensation used here (TDC1) differs from other available measures of executive compensation offered (TDC2). Rather than focusing on the net value of stock options exercised, the measure used here focuses on the total value of stock options granted to an executive. This measure is both consistent with the compensation literature as well as provides a more realistic gauge of compensation received by an executive.

⁶ S&P codes were used to cross-validate industry as firms were selected using S&P equity indices.

Return on Assets—the ratio of net operating income to total book value of assets—has been a widely used accounting measure of firm performance. Based on common accounting rules, ROA becomes relatively comparable across organizations. Median industry ROA was calculated for each year across each industry and subtracted from ROA to adjust for industry-specific effects. These values reflect an organization's ability to generate returns in excess of industry standards.

Other control variables include total assets—included in each of the models to control for firm size. Dummy variables were also included in the models to control for industry-specific effects. CEO age has been found to be positively related to both compensation (Mehran, 1995; Milbourn, 2003) and likelihood of layoffs (Budros, 2004). As a result, CEO age was included in each of the models estimated to predict both the likelihood of future layoff announcements and relative CEO compensation.

Methodology

The approach used to test the hypotheses is grounded in a longitudinal multi-method approach. To test hypothesis 1 and 2, a logit model is estimated predicting the probability of announcing layoffs as a function of relative executive compensation, controlling for firm performance. The dependent variable, layoff announcement, is set equal to one if a firm announces a layoff for a given year, zero otherwise. This allows for multiple layoff announcements for a firm over the history of the sample. Concerned with the relationship between relative CEO compensation and layoffs, multiple layoffs are allowed for a firm's CEO until a change in CEO is reported.

To test for the impact of layoff announcements on future firm performance (H3a) and executive compensation (H3b), a multivariate GLS regression for panel data is estimated. Several methods could be employed to investigate the impact of being either above/below the industry median *and* announcing layoffs. One method, using dummy variables, group membership equal to one if below the median, could be interacted with a variable set equal to one if layoffs are announced, zero otherwise. While this methodology would be a more straightforward test for the interaction between group membership and announcing layoffs, it would not allow for interpretation of the direct effects associated with other variables unique to that group membership. As a result, separate regression equations will be estimated according to group membership, that is, for each group below or above industry median on prelayoff measures for the dependent variable of interest. Due to the collinearity between predictors, namely between one-period lagged values of firm performance ($r = 0.83$), OLS estimation would provide inconsistent and inefficient estimates.⁷ Generalized least squares (GLS) estimation provides unbiased, efficient estimates in the presence of serial correlation (Hayashi, 2000). Specific GLS techniques for dynamic panel data were used to estimate the impact of layoffs on both future relative firm performance and CEO pay, controlling for past values of each dependent variable as well as other additional control variables. Firm performance and executive compensation as dependent variables are regressed upon layoffs (measured as the percentage of the workforce affected) and the control variables included in the logit models used to predict layoff announcements.⁸

⁷ The presence of serial correlation also renders individual parameter significance tests (t-tests) and overall model goodness-of-fit tests (F-tests) invalid (Hayashi, 2000). As a result, OLS no longer serves as the best linear unbiased estimator.

⁸ Since many of these variables are hypothesized to be related within firms, moderate collinearity was expected. To test for multicollinearity across the variables, variance inflation factors (VIFs) were estimated. Commonly accepted standards for VIF values indicated moderate collinearity across some of these relationships (O'Brien, 2007). The

Results

Summary statistics and a correlation matrix are presented in Table 2 of the Appendix. Table 3 presents the results of model estimation for the relationship between past CEO relative compensation, relative firm performance, and the likelihood of future layoff announcements.

Model 1 provides a test for a linear relationship between past relative CEO pay and firm performance with the likelihood of future layoff announcements. The results show a positive relationship between CEO relative compensation and the likelihood of future layoff announcements ($\beta = 0.004, p < .05$). Conversely, the results confirm a negative linear, but not significant, relationship between firm relative performance and likelihood of future layoff announcements ($\beta = -0.614, p > .05$). These results indicate the existence of weak to moderate relationships between relative measures of CEO pay and firm performance with the likelihood of layoff announcements in the following year.

Though positive and significant, Model 1 does not allow for an examination of the non-linear relationship proposed in Hypothesis 1. That is, whereas Model 1 provides a base-line test for a linear relationship between total relative pay, Model 2 provides a piece-wise estimation of the relationship. This approach is more flexible as it allows for a break in the line the estimated regression line for those above or below the annual industry median. As shown in Table 3, firms performing below the annual industry median were found to be more likely to engage in layoffs ($\beta = -2.653, p < .05$) than those firms performing at or above the industry median ($\beta = 0.930, p > .10$). These results provide support for Hypothesis 1. It is also important to note the increase in

values pertaining to the models presented here provide evidence of moderate collinearity and should not significantly inflate any values of statistical significance.

significance of coefficients obtained for relative firm performance between modeling linear effects (Model 1) and those obtained when allowing for non-linear relationships (Model 2).⁹

Model 3 tests whether the relationship between CEO relative pay and likelihood of future layoff announcements is stronger among executives receiving compensation below the annual industry median (Hypothesis 2). The results confirm the existence of a non-linear relationship. That is, executives who receive compensation below the annual industry average are more likely to announce layoffs in the future ($\beta = 0.129, p < .05$) relative to those who received compensation at or above the median ($\beta = 0.003, p > .05$). These results offer partial support for Hypothesis 2. The existence of the ‘kink’ in the relationship offers support to the arguments provided by tournament, social comparison, and prospect theory. That is, executives who rank below the annual industry median were found to be more likely to announce layoffs in the following year, as compared to their peers who ranked above the median. Although consistent with what was predicted in terms of a non-linear relationship, the positive slope for those below the median is somewhat counterintuitive to what had been predicted. To test for efficiency of the relationships proposed in Models 2 and 3, Model 4 allows for both relative CEO pay and firm performance to enter the model simultaneously. The results confirm the direction of estimates obtained when modeled individually. That is, the estimates obtained are robust to alternative specification, and are therefore found to be efficient.

Hypothesis 3a predicted that organizational performance would increase for firms who performed below the industry median and engaged in layoffs, relative to those who performed at or above the median. To test this hypothesis, GLS regression equations were estimated for firms

⁹ In a separate analysis, I augmented the coding scheme to allow for an additional inflection point by including additional exponential variables in the regression equation. The results of this analysis, coupled with that shown in Model 1, justify the use and appropriateness of the non-linear relationship proposed in Hypothesis 1 and tested in Model 2.

who performed at or above the industry median (Model 5) and for those who performed below (Model 6). Table 4 reports the results of these analyses. Industry-adjusted ROA served as the dependent variable in both models. The results suggest that firms who under-performed the industry *and* engaged in layoffs increase their performance in the year following the layoffs ($\beta = 0.005, p < .001$), while no significant relationship was found for those firms who out-performed the industry and engaged in layoffs ($\beta = 0.000, p > .10$). These results provide strong support for Hypothesis 3a.

Models 7 and 8 from Table 4 test Hypothesis 3b—that is, total relative CEO compensation will increase more for those who receive compensation lower than the annual industry median and engage in layoffs, relative to those who earned above the median and engaged in layoffs. Similar to the test of H3a, the effect of layoffs on relative total CEO compensation is estimated for both those receiving above (Model 7) and below (Model 8) the annual median among CEOs for a given industry prior to the layoff. The results indicate that while pay below the median predicts layoffs, executives receiving compensation below the industry median prior to a layoff do not see increases in their compensation following layoff announcements ($\beta = -90.14, p > .10$). The results suggest that the announcement of layoffs do not influence future total relative compensation earned by executives. These results fail to provide support for Hypothesis 3b.

Additional Analyses

Dynamic panel data offer several benefits for the examination of the predictors and outcomes associated with layoffs across firms over time. However, these models are not without

significant challenges. Several additional analyses were performed to provide further robustness tests of the models presented here.

Dynamic panel data (DPD, hereafter) models are plagued by the existence of autoregressive tendencies across key variables. That is, models predicting future firm performance are likely to theoretically include lagged values of firm performance.¹⁰ Empirically, this may prove problematic. The existence of time trends in data can complicate analyses focused on changes in relative measures. Time trends can be removed by taking the first difference, also known as integration. If dependent variables require integration of any order beyond zero, $I(t)$, they may be referred to as unit-root processes which are likely to be serially correlated with the residuals (Hayashi, 2000; Lutkepohl & Kratzig, 2004). By subtracting the annual industry median from each of the dependent variables in the second set of analyses, I effectively removed unit-root tendencies. Using these values, results from Fisher-type unit-root tests for an AR(1) process allowed for the rejection of the null hypothesis that all panels contain unit-roots ($p < .000$).¹¹ As a result, lagged values of the dependent variable may enter the model as predictors since they will now be uncorrelated with errors ($e \sim N(0,1), i.i.d.$). Additional tests for serial correlation showed no significant correlation between error terms and lagged error terms or any of the predictors in the model. These results confirm the use of relative measures for dependent variables both removed unit-root tendencies common in panel data and reduced any correlation between errors and predictors.

When dealing with panel data, the “small T , large N ” problem (Nickell, 1981) means that while the centering of variables removes unit-root tendencies, it may introduce bias between

¹⁰ Separate analyses included additional lagged values of firm performance to determine the appropriate number of lags.

¹¹ The Fisher tests were based on augmented Dickey-Fuller tests for an AR(1) process which included a time trend. Both relative firm performance and CEO pay were tested for the presence of unit roots.

regressors and errors. Least-squares estimators of dynamic panel data are likely to suffer such *Nickell bias*, regardless of an autocorrelated error process (Anderson & Hsiao, 1982). GLS models can be used to correct for such bias. The presence of such bias is likely to influence the consistency and validity of the results as N approaches infinity while T remains fixed. To test whether the models presented here suffer from *Nickell bias*, tests for internal validation were performed. Specifically, the presence of such bias would be confirmed if estimates are significantly different when the sample size is reduced, but T is held constant. The results of these tests rejected the null hypothesis that the GLS estimates suffered from such bias.

Lastly, it is important to note the overall trade-offs associated with the use of the econometric approach taken here. The ability for GLS to serve as a correction for serial correlation assumes strict exogeneity among the errors. If the errors are found to be predetermined, GLS estimates can become inconsistent. First, errors were generated for the estimates obtained for Models 5 through 8. These errors were then plotted over time to examine the existence of any time trends that would be indicative of serial correlation ($r = -0.02, p > .10$). The results allowed for the rejection of the null hypothesis that at least one of the models suffered from serial correlation. Together, the tests presented here confirm that the risks associated with GLS estimates of DPD have been minimized. As a result, the estimation techniques employed were found to provide consistent, unbiased, and efficient estimates of the predictors.

In addition to the test applied above, several alternative models were specified to assess the robustness and consistency of the models presented here. First, alternative control variables were substituted into the model to check for consistency across the variables controlling for industry and firm size. Across each of the models, alternative lag structures were also estimated

to ensure the appropriate lags of dependent variables were included in the final models. Additional results obtained using Granger causality tests confirmed use of one period lags of the dependent variable as predictors. Together, these results provided support for the use of one period lags for each of the models presented in Table 4.

DISCUSSION

To examine the factors that predict layoff announcements at large, publicly traded firms in the U.S., I estimate the influence of executive- and organizational-level variables on the likelihood of announcing a layoff in the coming year. At the organizational level, I hypothesize that the relationship between firm performance and the likelihood of announcing a layoff is stronger for organizations that performed below their industry median. The results provided support for this hypothesis. The results also supported a relationship between executives' relative compensation and propensity to announce layoffs in the future. Specifically, the negative relationship between CEO compensation and likelihood of layoffs is hypothesized to be stronger among executives who receive compensation below their industry peers. The results provided some support for these predictions; however the direction of the relationship was counter to what was predicted. These findings suggest that firms led by an executive receiving compensation below the annual industry median are more likely than their peers to announce layoffs in the following year, but that among these below median paid CEOs, pay was a positive predictor of layoffs. This finding was both surprising and somewhat counter to what had been hypothesized. The result suggests that executives receiving compensation below the industry median were more likely to report layoffs the closer they became to the annual industry median. One possible explanation for these findings is the persistent and prevalent belief that layoffs

serve to increase future firm performance—an assumption supported by the findings presented here. Assuming CEO pay is linked to firm performance, layoffs that increase firm performance are likely to increase CEO pay as well. However, the results suggest that any increases in firm performance derived from layoffs do not translate into significant increases in relative CEO total compensation. Together, these results provide evidence suggesting that both relative CEO compensation and firm performance are significant predictors of future layoff announcements.

Analyses were also conducted to examine the influence these layoff announcements had on future relative firm performance and CEO pay. The results yielded evidence suggesting that firms that performed below their annual industry average benefited from layoffs in terms of increased performance in the following year. Similar results were not obtained for the models in which CEO pay served as the outcome. In other words, poor performing firms that engage in layoffs are much more likely to see increased performance in the following year, as compared to those outperforming the industry median. CEOs, however, were unlikely to see any increase in their relative compensation following layoff announcements, regardless of their relative compensation prior to the announcements. Put differently, efforts by executives to increase their relative compensation through layoffs did not appear to yield such increases.

LIMITATIONS

Despite obtaining results that both confirmed several of the hypotheses proposed and were found to be robust across several statistical diagnostic tests, the study presented here is not without certain limitations. The theory and model proposed here posit that executives evaluate total compensation relative to the median of peers in the same industry. Such an assumption, however, may not be accurate. Without surveying executives, it is difficult to discern the labor

market executives use to construct such comparisons. Future work is required to assess the degree to which executives evaluate total compensation relative to peers, as well as the selection of the peer group. Work in this area would provide valuable insights into the relative comparisons executives make when evaluating their pay packages.

Second, I assume that executives evaluate their ranking in the external labor market as a function of total compensation. It is possible that some executives evaluate different aspects of pay (e.g., salary), or focus on personal wealth differently, or possibly construct other evaluations based upon specific markers of success (i.e., buildings in their name, scholarship programs, public charitable donations, ownership of sports teams, ranking on a certain list). In other words, *how* executives compare themselves to their peers offers valuable insights into the social comparisons that drive the behaviors aimed at advancing through the ‘tournament’.

Third, while the work presented here benefited from the inclusion of multiple industries, it remains limited in the ability to generalize across additional industries. The effect of industry on empirical results has been debated in the strategy field (Dess, Ireland, & Hitt, 1990). While some studies have focused exclusively on a single industry (Baumol, Blinder, & Wolff, 2003; Mishra & Mishra, 1994; Yoo & Mody, 2000), others start with a focus on those comprised in a broad equity index, namely the S&P 500 (Budros, 2000, 2002; Hillier, Marshall, McColgan, & Werema, 2006). A balanced approach that acknowledges the tradeoffs associated with controlling for industry would minimize the limitations inherent in single versus multiple industry research designs.

Lastly, the model presented here does not include a variety of additional factors that may influence an executive’s decision to engage in layoffs. Organizational factors such as governance, HR policies, and business strategies were not examined as predictors of layoffs in the

work presented here. Moreover, macro-economic conditions are likely to influence the likelihood of layoffs. Workforce reductions during periods in which the broader economy is performing well may have different impacts on future firm performance than if the economy was performing poorly. Broader economic conditions were not explicitly tested here for a number of reasons. First, by adjusting firm performance by the annual industry average, I was able to remove any influence broader economic conditions would have on firm performance. Second, adjusting performance measures for broader industry conditions substituted the effects the broader economy may have on firm performance for industry-specific effects.

FUTURE DIRECTIONS

The research presented here focuses on predictors and outcomes of layoffs at the CEO and firm-level. However, substantial research has emerged concerning the impact of layoffs on employees remaining at an organization. Such ‘survivor analyses’ have questioned the influence of workforce reductions on morale (Wager, 1998), motivation (Brockner, Grover, O’Malley, Reed, & Glynn, 1993), commitment (Armstrong-Stassen, 1994; Mellor, 1992), justice perceptions (Armstrong-Stassen, 1998; Mone, 1994), voluntary turnover (Trevor & Nyberg, 2008), as well as individual-level performance implications attributable to layoffs (Brockner, Grover, Reed, & DeWitt, 1992). Such concerns have been expressed in previous studies that have focused on the amount of work and subsequent stress associated with large scale reductions in workforce (Pfeffer, 1998; De Meuse et al., 2004). Future work is required to better understand the relationship between the factors associated with decisions for future layoffs and the various outcomes associated with these decisions across different levels of the organization. That is, there is a need for more work on the relationship between CEO pay and the various reference

points used for purposes of comparison, as well as the effect these comparisons have on executives' decision making processes. Such comparisons may also not be stable across their tenure at a given firm or across their career. These differences in how executives evaluate their pay over time merits further investigation.

When media coverage focuses on layoffs and executive compensation, such exposure can become intense for organizations as CEOs become characterized as greedy, villainous capitalists seeking financial and monetary gains at the expense of employees (Henderson et al., 2010). Indeed, media coverage often begins to focus on instances of excess executive compensation following periods of significant layoff announcements. Since many of the studies cited throughout this work focus on layoff data collected through media reports, much of the empirical evidence suffers from range restriction in that most of the data is collected for large-scale workforce reductions. Future research is required on the effects of workforce reductions of all sizes. Moreover, since the vast majority of media reports concern layoff announcements at publicly traded companies, scholars would also benefit from data collected on layoff announcements at private firms.

Another theoretical issue relates to the role of corporate oversight and governance. Strategic and investment decisions made by executives may reflect their personal interests rather than those of the investors and stakeholders (Shleifer & Vishny, 1997). From an agency perspective, oversight and governance entails the mechanisms used to mitigate the potential misalignment of interests inherent in the separation of ownership and control (Fama & Jensen, 1983; Jensen & Meckling, 1976; Shleifer & Vishny, 1997). Stronger corporate governance structures translate into greater oversight by stakeholders over the decision making process of executives (La Porta, Lopez-de-Silanes, & Shleifer, 1999). In light of the research presented

here, increased board oversight would limit executives' ability to increase their relative compensation through layoffs. Thus, it remains important that future work take into account the directions noted here as scholars continue explore the intersection of CEO pay, layoffs, and firm performance.

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Table 1. Review of studies focused on the relationship between executive compensation and layoffs.

Study	Sample	Methodology	Key Variables	Findings	Limitations
Brookman, Chang, & Rennie, 2007	229 U.S. corporations announcing layoffs	Univariate t-tests; logistic regressions predicting CEO pay.	Layoff dummy variable; CEO cash, stock-based, and total pay.	CEO pay increases for those announcing layoffs in the previous year, relative to those without such announcements.	Focus on changes around layoff announcements, specifically after the announcement. Do not examine whether changes in level or composition of CEO pay predict layoffs—only infer that such a link exists.
Hallock, 1998	550 U.S. corporations announcing layoffs	Univariate t-tests to compare between firm with or without layoff announcements; logistic regression (using dummy variable to account for influence of layoff announcement).	Level of pay; percentage change in pay; firm size	Firms that announce layoffs in the previous year pay their executives more, relative to those who do not announce at least one layoff.	Do not directly test whether these differences can be used to predict the likelihood of a layoff. Focuses on univariate comparisons between firms announcing at least one layoff in the previous year to those without such announcements.
Henderson, Masli, Richardson, & Sanchez, 2010	558 S&P 1500 corporations reporting layoff expenses	Logit, ordinary least-squares, and logistic regression.	Layoff expenditures; CEO total, bonus, and equity-based pay; risk-adjusted and abnormal buy-hold-sell returns.	Increases in layoff expenses were associated with declines in CEO bonus compensation, but increases in equity-based compensation.	Operationalize layoffs through layoff expense/charges reported by the organization. Focus on post-layoff analyses.

Table 2. Descriptive statistics and correlations

Variable (units)	Mean	S.D.	1	2	3	4	5	6	7
1. Layoffs (% of workforce)	6.92	6.40							
2. ROA (%)	.104	.097	-0.1640						
3. CEO Compensation (in thousands)	4041	255572	0.0295	0.0144					
4. Financial Industry	.41	.489	-0.0443	-0.3690	-0.0328				
5. IT Industry	.38	.488	0.0698	0.2108	0.0699	-0.6669			
6. Consumer Staples Industry	.21	.406	-0.0306	0.1914	-0.0445	-0.4166	-0.4129		
7. CEO Age (years)	56	7.39	0.0216	-0.0563	-0.0188	0.1545	-0.2323	0.0934	
8. Assets (millions)	39618	85403	0.0345	-0.2425	0.0969	0.4110	-0.2786	-0.1604	0.2048

$N = 1,714$. *CEO Compensation* is CEO total compensation, scaled in thousands of U.S. dollars. *ROA* represents return on assets calculated using net income before earnings, interest, taxes, depreciation, and amortization. *Total Assets* represents the total reported assets of the firm, measured in millions of U.S. dollars. *Financial Industry* is set equal to one if the firm operated in the financial services industry, zero otherwise. *IT Industry* is set equal to one if the firm operates in the information technology industry, zero otherwise. *CEO Age* represents the reported age of the CEO.

Table 3. Logit results for models predicting the likelihood of future layoff announcements.

Variable	Model 1	Model 2	Model 3	Model 4
<i>CEO Pay</i> _{t-1}	0.004* (1.89)	0.005* (1.88)		
<i>CEO Pay</i> _{Below Median, t-1}			0.129* (2.32)	0.154** (2.96)
<i>CEO Pay</i> _{Above Median, t-1}			0.003 (1.44)	0.003 (1.37)
<i>ROA</i> _{t-1}	-0.614 (-0.76)		-0.699 (-0.81)	
<i>ROA</i> _{Below Median, t-1}		-2.653* (-2.14)		-3.492** (-2.75)
<i>ROA</i> _{Above Median, t-1}		0.930 (0.96)		1.237 (1.29)
<i>Total Assets</i> _{t-1}	0.004*** (5.62)	0.005*** (5.76)	0.004*** (5.24)	0.004*** (5.37)
<i>Financial Industry</i>	-0.929*** (-4.26)	-0.898*** (-4.01)	-0.881*** (-3.92)	-0.830*** (-3.68)
<i>IT Industry</i>	-0.282 (-1.35)	-0.327 (-1.64)	-0.21217 (-1.11)	-0.272 (1.36)
<i>CEO Age</i>	0.004 (0.45)	0.003 (0.27)	.007 (0.65)	0.007 (0.60)
<i>Constant</i>	-1.994*** (-3.35)	-2.045** (-3.15)	-2.075*** (-3.12)	-2.159** (-3.24)
Log likelihood	-586	-584.17	-582	-579
Wald chi-square	44.51***	48.63***	49.84***	56.06***

* $p < .05$; ** $p < .01$; *** $p < .001$
z-scores are provided in ()

Models were estimated using separate panel logit equations. $n = 1,659$. *CEO Pay* is CEO total compensation, scaled in millions of U.S. dollars. *CEO Pay (Below Median)* is set equal to *CEO Pay* when the executive receives compensation below the annual industry median, zero otherwise. *CEO Pay (Above Median)* is set equal to *CEO Pay* when the executive receives compensation above the annual industry median, zero otherwise. *ROA* represents return on assets calculated using net income before earnings, interest, taxes, depreciation, and amortization. *ROA (Below Median)* is equal to *ROA* if below annual industry median, zero otherwise. *ROA (Above Median)* is equal to *ROA* if above annual industry median, zero otherwise. *Total Assets* represents the total reported assets of the firm, measured in millions of U.S. dollars. *Financial Industry* is set equal to one if the firm operated in the financial services industry, zero otherwise. *IT Industry* is set equal to one if the firm operates in the information technology industry, zero otherwise. *Consumer staples* represents the omitted industry category. *CEO Age* represents the reported age of the CEO.

Table 4. Regression results of executive compensation and firm performance regressed upon layoffs and control variables.

	Model 5	Model 6	Model 7	Model 8
<i>Dependent Variable</i>	<i>Firm Performance</i>	<i>Firm Performance</i>	<i>CEO Pay</i>	<i>CEO Pay</i>
<i>Sample</i>	<i>Above Median Before Layoff</i>	<i>Below Median Before Layoff</i>	<i>Above Median Before Layoff</i>	<i>Below Median Before Layoff</i>
<i>Layoffs</i> _{t-1}	-0.000 (-0.02)	0.005*** (3.92)	-48.37 (-0.13)	-90.14 (-0.83)
<i>Total Assets</i>	-0.000 (-0.08)	-0.000 (-1.08)	33.41** (2.55)	-6.70 (-0.72)
<i>Financial Industry</i>	0.004 (0.57)	0.008 (1.00)	-1611.9 (-0.45)	763.8 (0.39)
<i>IT Industry</i>	-0.014* (-2.13)	-0.001 (-0.11)	6540.4* (1.94)	1123.2 (0.58)
<i>ROA</i> _{t-1}	1.047*** (31.37)	0.709*** (12.18)		
<i>CEO Pay</i> _{t-1}			0.143*** (4.11)	-0.112 (-0.56)
<i>CEOs Age</i>			17.41 (0.09)	-24.74 (-0.42)
<i>Constant</i>	-0.0089 (-1.39)	-0.0049 (-0.74)	1763.7 (0.16)	1427.2 (0.38)
R-square	0.29	0.14	0.04	<0.01
F-statistic	201	36	32	2.27
prob > F	0.000	0.000	0.000	0.89
<i>n</i>	75	117	129	61

* p< .05; ** p< .01; *** p< .001

t-statistics are provided in ()

Models were estimated using generalized least-squares estimation. *Above Median* refers to the partitioning of the sample by firms below or above the annual industry median prior to the layoff for the dependent variable. *CEO Pay* is CEO total compensation, scaled in millions of U.S. dollars. *ROA* represents return on assets calculated using net income before earnings, interest, taxes, depreciation, and amortization. *Total Assets* represents the total reported assets of the firm, measured in millions of U.S. dollars. *Financial Industry* is set equal to one if the firm operated in the financial services industry, zero otherwise. *IT Industry* is set equal to one if the firm operates in the information technology industry, zero otherwise. *Consumer staples* represents the omitted industry category. *CEO Age* represents the reported age of the CEO.