

# Layoffs, Top Executive Pay, and Firm Performance

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*This paper examines the connection between layoffs, executive pay, and stock prices. Firms that announce layoffs in the previous year pay their CEOs more, and give their CEOs larger percentage raises than firms which do not have at least one layoff announcement in the previous year. However, the likelihood of announcing a layoff varies dramatically along other dimensions, for example firm size, which are also correlated with CEO pay. Once firm-specific fixed effects are controlled for, the CEO pay premium for laying off workers disappears. In addition, there is a small negative share price reaction to layoff announcements. (JEL J33, G14)*

The popular press and some policy groups are increasingly reporting stories of firms with highly paid CEOs that fire thousands of workers only to see large increases in the firm stock price (and their own wealth) and their pay in the following year.<sup>1</sup> There are several reasons why we might see layoffs in these firms. There may, for example, be a declining product demand which also shifts labor demand for the

firm.<sup>2</sup> There is some support for this given the significant numbers of layoffs during the economic downturn of the early 1990's. Secondly a firm may announce layoffs when the production process changes in a way to increase worker productivity and reduce firm labor demand. This may have been occurring in recent layoffs with the substitution of workers with new capital (computers, for example). If it is the case that CEOs do earn more while workers lose their jobs, it could be the result of a compensating differential for a painful aspect of CEOs' jobs or it could be that downsizing is simply a way to increase shareholder wealth and that is the job of the CEO.<sup>3</sup>

The main focus of this paper is to document whether there is *empirical* evidence for the notion that CEOs heading firms that let workers go are relatively more likely to see increases in their own pay in the following year for making these decisions. The work focuses on the compensation of, on average, 550 of America's highest paid CEOs each year from 1989 to 1995. These data are merged with standard firm accounting data, stock performance data, and detailed data on layoffs back to 1987. With these data, I also document the nature of

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<sup>1</sup> See, for example, Sarah Anderson and John Cavanagh (1994); Allan Sloan (1996).

<sup>2</sup> John Abowd et al. (1990) describe a case of a "permanent staff reduction," which this paper explores in an event study framework in Section III.

<sup>3</sup> Jay Dial and Kevin J. Murphy (1995) explore issues of downsizing and shareholder wealth in great detail at General Dynamics.

the news contained in layoff announcements by looking at their impact on stock prices. Layoff announcements could be a signal that the firm has finally realized that it needs fixing and the layoffs are a positive sign of reorganization that will lead to a more successful firm. On the other hand, layoffs could be a signal that the firm is on a downward trend. I use standard event study analysis to examine the cumulative excess returns in event windows around the layoff announcement dates.

Consistent with anecdotal evidence as reported in the business press, in the cross section, firms that announce layoffs tend to pay their CEOs more in the years following the layoffs and CEOs heading firms with recent layoff announcements enjoy larger percentage salary increases. However, after controlling for other determinants of CEO pay across firms, I find that layoffs have little impact on CEO pay. That is, conditional on other factors (both observed and unobserved), CEOs on average do not earn more in years following announced layoffs. Moreover, contrary to the conventional wisdom, there is a small *negative* stock market reaction to announced layoffs.

The data and data sources are described in Section I. Section II explains the basic effects of layoff announcements on CEO pay, outlines the empirical model of CEO pay, and describes the layoff-CEO pay results. Section III studies the effects of layoff announcements on the stock market and on the CEOs' own shareholdings, and concluding comments are in Section IV.

### I. Data

The CEO compensation data are from *Forbes Magazine's* annual CEO compensation issues and constitute the original base sample. For each firm for which I have measures of CEO compensation I search for information on returns, accounting characteristics, and layoff data. The firms' accounting data are collected from Standard & Poor's *Compustat*. Firm stock market performance measures are collected from the Center for Research in Security Prices (CRSP) at the University of Chicago. Finally, layoff data are collected from the *Wall Street Journal* using Pro Quest's *Newspaper Abstracts*.

### A. CEOs

The first column in Table 1 reports means (and standard errors) for various measures of real (1995) compensation and detailed personal characteristics, such as CEO's age (average of 57), years of seniority as CEO (average of 9), and years of seniority in the firm (average of 24), for the CEOs of 800 of the largest firms in the United States collected from *Forbes Magazine's* annual compensation issues. This study uses the 1990–1996 compensation issues which cover the seven years from 1989 through 1995.

*Forbes* reports three main measures of compensation: salary plus bonus (mean real value in 1995, \$1.3 million), salary plus bonus plus other (including such measures as savings plan contributions, and the value of memberships to clubs) (\$1.7 million), and total compensation (\$2.5 million). Total compensation is the sum of salary, bonus, and other, but also includes the value of stock options exercised. Another possible measure of compensation that is not studied here would include the value of stock options granted to a CEO in a given year. Data on stock options granted are difficult to collect especially in the earlier years of the study, before the Securities and Exchange Commission (SEC) began requiring firms to disclose options in a standard format. In addition, stock options are often granted in bunches every few years. This makes it particularly difficult to attach a given option grant with a given year. (See, however, Brian Hall and Jeffrey Liebman, 1998.) Clifford W. Smith, Jr. and Jerold L. Zimmerman (1976) also discuss that it is difficult to value (the potentially restricted) options granted to managers. This paper focuses mainly on total compensation, although the results are very similar if salary plus bonus or salary plus bonus plus other are used. Using these data, the plot in Figure 1 shows that real CEO pay has increased dramatically from 1989 through 1995 (over 40 percent).

### B. Firms

*Compustat* and CRSP are the sources for the annual firm characteristic data. Table 1 reports summary statistics for the market value of the

TABLE 1—SAMPLE MEANS (AND STANDARD ERRORS) FOR PAY AND OTHER CHARACTERISTICS BY LAYOFF STATUS

	All firms	No layoffs announced in previous year	At least one layoff in previous year	<i>t</i> <sup>a</sup>
	(1)	(2)	(3)	(4)
Panel A: Levels of pay				
Salary plus bonus (thousands)	1282 (27.24)	1231 (29.61)	1686 (59.73)	6.83
Salary plus bonus plus other (thousands)	1663 (34.86)	1590 (37.18)	2241 (94.90)	6.39
Total compensation (thousands)	2501 (120.99)	2379 (86.22)	3466 (598.34)	1.80
Panel B: Percentage change in pay				
Percentage change in salary plus bonus <sup>b</sup>	0.09 (0.01)	0.08 (0.01)	0.23 (0.04)	4.14
Percentage change in salary plus bonus plus other <sup>b</sup>	0.16 (0.01)	0.15 (0.01)	0.26 (0.04)	3.18
Percentage change in total compensation <sup>b</sup>	0.41 (0.04)	0.40 (0.05)	0.46 (0.09)	0.53
Panel C: CEO characteristics				
Age	57.08 (0.12)	57.07 (0.13)	57.13 (0.29)	0.21
Seniority in firm	24.02 (0.21)	24.03 (0.22)	23.96 (0.68)	0.09
Seniority as CEO	8.90 (0.14)	9.24 (0.15)	6.21 (0.27)	6.96
Panel D: Firm size				
Market value of equity (millions)	5289 (159.45)	4431 (133.20)	12096 (877.47)	8.64
Total number of employees (thousands)	29.55 (0.96)	24.88 (0.90)	66.53 (4.29)	9.51
Sample size	3242	2879	363	

Sources: Compensation and CEO characteristic data are from *Forbes Magazine* and are in real 1995 dollars. Firm accounting data are from Standard & Poor's *Compustat* and are in 1995 dollars. Layoff data collected by author from *Wall Street Journal* articles as reported by Pro Quest's *Newspaper Abstracts*.

<sup>a</sup> *t*-statistic for the difference in sample means between columns (2) and (3).

<sup>b</sup> Percentage change in compensation from year  $t - 1$  to year  $t$ .

firm (calculated as the price per share times the total number of shares, reported in millions of dollars) and the number of employees for

each firm (reported in thousands) from 1987 through 1995. The averages for these variables over the sample period were \$5.3 billion and

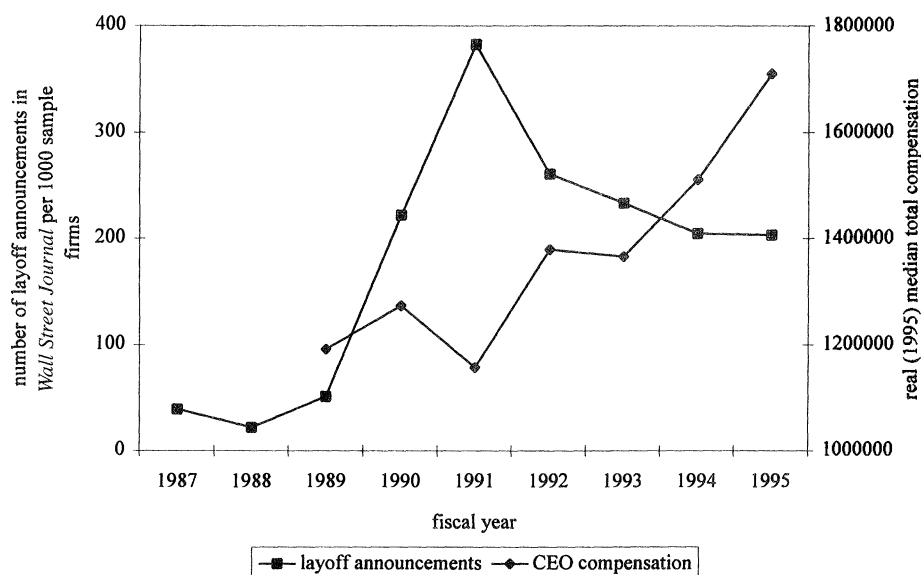


FIGURE 1. LAYOFF ANNOUNCEMENTS AND CEO COMPENSATION BY YEAR

29,550, respectively. The average number of employees has increased by 8.7 percent between 1987 and 1995 from 28,270 to 30,730. The average firm value has increased by roughly 85 percent between 1987 and 1995, and in 1995 stood at about \$6.7 billion. The stock return of the firm varies significantly. The yearly average for this variable varied from 1987 through 1995 from  $-0.12$  to  $0.44$ .

### C. Layoffs

The ideal data on layoffs for the questions I posed in the introduction would include all layoff announcements of any size for all firms in the sample, and include the firm name, the date, the size, and the reason and nature (e.g. permanent, temporary, etc.) of each layoff. The layoff data I have assembled are collected from Pro Quest's *Newspaper Abstracts*, a CD-ROM data source that lists abstracts of articles from major newspapers. *Newspaper Abstracts* allows the user to search for abstracts or headlines with particular words or word combinations, from particular publications, and over specific time periods.

I searched for abstracts and headlines from January 1, 1987 through December 31, 1995,

in the *Wall Street Journal* which contained any of the following words or word combinations: "layoff," "laid off," "downsize," "plant closing," or "downsizing." In these years I discovered 3,470 abstracts in the *Wall Street Journal* which contained these words. If, for a given firm, no abstracts were found in a year, that firm was assigned zero layoff announcements. Clearly many of the articles with these words in them could not be linked with a specific firm as they may have been—for example, an article on how "laid off" workers deal with stress. Robert B. Thompson II et al. (1987) discuss potential problems with using the *Wall Street Journal* as it may not be true that all firms in the sample announce all events (or that the *Journal* chooses to report all events) with equal frequency or timeliness. However, most event studies have relied on the *Wall Street Journal* to identify events and this work assumes that all layoff announcements for these firms are reported in the *Wall Street Journal*. There are at least two reasons why this is a reasonable assumption. First, the base sample (the compensation data) is essentially the largest firms in the United States. Therefore, if something happens in these firms, it is probably reported in the *Wall Street Journal*. Secondly, layoffs of

unusually small numbers of employees are reported in some instances providing evidence that even small news events in these large firms get reported and appear in my data. An alternative measure of downsizing might be fluctuations in the number of employees reported by firm by year in *Compustat*. This measure is not likely to be superior to the measure used here since there is some evidence that *Compustat* employment numbers are error prone as they are not subject to auditing as many *Compustat* financial data are.<sup>4</sup>

The union of the data sets yields a panel of 3,242 valid firm-year observations. The distribution of the number of layoff announcements per 1,000 firms is displayed by year in Figure 1 (along with the time-series plot of average CEO pay discussed above).<sup>5</sup> It is clear from the figure that there were substantially more layoffs announced in each year in the 1990's than in the late 1980's.<sup>6</sup> Although the layoff numbers in Figure 1 are rates per 1,000 firms in my sample, the general trend in layoffs is consistent with the results of Henry S. Farber (1993, 1996), who explores layoffs for a much more general group of firms.

I also collected data on the reasons for layoff announcements for the 1,287 announced layoffs in my sample. A large proportion of the firms reported either a slump in demand in the economy (21.5 percent), restructuring or reorganization (15.7 percent), or cost control (18.3 percent) as reasons for layoffs. A relatively large fraction (20.4 percent) did not re-

port a reason for the layoff. Most firms (86.3 percent) never make layoff announcements in a given year. However, of the firms that make at least one layoff announcement, 67 percent make only one in a given year.

## II. Layoff Announcements and CEO Pay

### A. Basic Facts

The goal of this section is to study the simple connection between announced layoffs and CEO pay, beginning with columns (2) and (3) of Table 1. Column (2) presents mean characteristics for firms that made no layoff announcements in the previous year. Column (3) presents mean characteristics for firms that made at least one layoff announcement in the previous year. Panel A of Table 1 is evidence for the view that firms that announce layoffs have CEOs who earn relatively large sums in the year following the layoff. For each of the three measures of compensation, CEOs who head firms that had at least one announced layoff in the previous year earn between 37- and 46-percent (depending on which measure of compensation is used) higher average pay than CEOs with no such announcements.

The next panel of Table 1 documents that even when looking at percentage changes in pay from the previous year to the current year, CEOs whose firms announced layoffs in the previous year enjoyed higher raises relative to CEOs of firms that did not, although this difference is only significant for the first two measures of pay. It is also the case that the medians (not reported here) of each of these variables are smaller for the "no layoff in the previous year" group relative to the group that announced at least one layoff in all cases.

Of course, simply because these firms announce layoffs and have higher CEO pay does not mean that these layoffs cause the higher pay. Perhaps, for example, larger firms tend to lay off workers more frequently and have higher CEO pay. It is well documented that larger firms pay their CEOs more [see, for example, Kevin J. Murphy (1985) and Michael C. Jensen and Murphy (1990)]. The question here is: are large firms more likely to lay off workers? If workers were laid off randomly

<sup>4</sup> In the *Compustat* data for the firms in my sample, for example, there are many instances where a firm in consecutive years reports precisely the same number of employees (for example, R. R. Donnelley & Sons, Warner Lambert, and Seagate Technology). Furthermore, Universal reported exactly 25,000 employees in 1992, 1993, and 1994. Berkshire Hathaway reported exactly 22,000 employees in those three consecutive years.

<sup>5</sup> Throughout the paper, year means fiscal year for that company. For many firms, the fiscal and calendar years are the same. In the regressions which follow I control for year effects using indicators which represent the calendar year in which most of the fiscal year falls. If, instead, I use the actual fiscal years to control for year effects, I get virtually identical results.

<sup>6</sup> The simple correlation between the annual unemployment rate and the annual number of announced layoffs announced in the *Wall Street Journal* is 0.67.

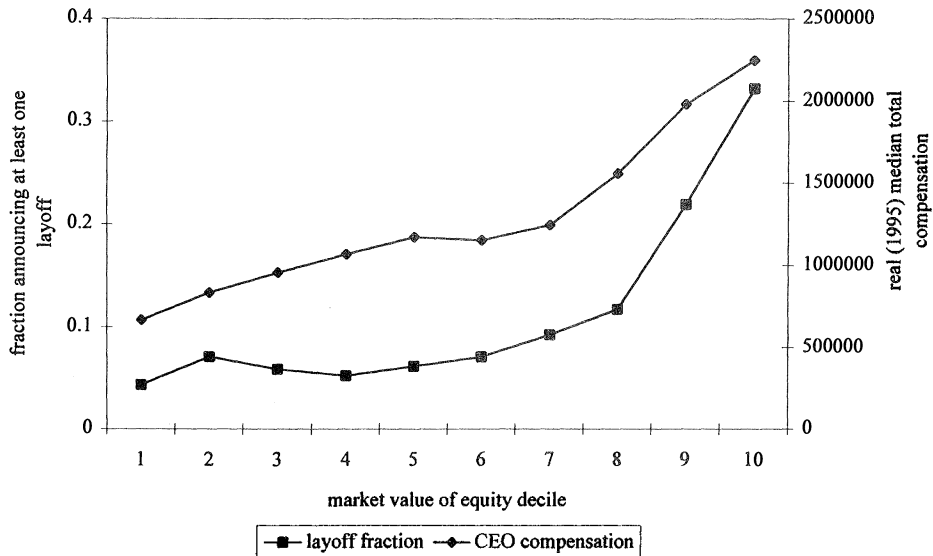


FIGURE 2. FRACTION OF FIRMS ANNOUNCING AT LEAST ONE LAYOFF AND MEDIAN TOTAL CEO COMPENSATION BY MARKET VALUE OF EQUITY DECILE

and if larger firms have more employees,<sup>7</sup> then we might expect larger firms to be more likely to announce layoffs. Panel D of Table 1 shows that the average size of the firms with layoff announcements is much larger than firms that do not make layoff announcements. As further evidence of this point, in Figure 2 I plot the fraction of firms announcing at least one layoff within each of the 10 firm stock market value (which is my measure of firm size) deciles. Between 1987 and 1995, 4.6 percent of the smallest 10 percent of firms (measured in terms of stock market value) announced layoffs, whereas 34 percent of the largest 10 percent of firms did over the sample period. It is clear from the figure that the largest firms are, on average, much more likely to announce lay-

offs (note, however, there is not a significant difference between deciles 1 and 6, for example). Figure 2 also plots the median total compensation over the sample period.<sup>8</sup> The similarity in the shapes of the two lines is striking. This suggests that the simple relationship found in the cross section between layoff events and CEO pay is not a causal one. While Figure 2 indicates that controlling for at least firm size is clearly necessary to more closely examine the link between layoffs and CEO pay, we need to be aware that other features of firms, both observed and unobserved, may be simultaneously influencing both variables.

#### B. Empirical Model of CEO Pay and Results

Figure 2 indicates the need to account for the multiplicity of factors that influence CEO

<sup>7</sup> Certainly one measure of firm size can be the total number of employees in which case the statement in the text would be true by definition. Typically, other measures such as stock market value of the firm, profits, or total assets are used to measure firm size. However, these measures are all correlated with one another and with total number of employees. The simple correlation between total number of employees and stock market value of the firm in this sample is 0.49.

<sup>8</sup> A plot of the average number of employees versus the same ten-firm market value deciles yields a similarly shaped figure. In addition, plots of the other two measures of compensation against market value deciles have a similar upward trend with increasing average levels of pay at the highest firm market value deciles.

pay while simultaneously affecting the propensity for layoffs by firms. The following regression model will be used as a basis to further explore the relationship between layoffs and CEO pay in a multivariate context:

$$(1) \quad C_{it} = x_{it}\beta + F_{it}\gamma + R_{it-1}\delta \\ + L_{it-1}\lambda + \alpha_i + e_{it},$$

where  $C$  = Log CEO compensation,  $x$  = CEO characteristics (such as age and seniority),  $F$  = firm characteristics (such as market value of equity),  $R$  = market return,  $L$  = a binary indicator for a layoff announcement,<sup>9</sup> and  $(\alpha_i + e_{it})$  is the composite error term containing possible permanent effects. The subscripts  $i$  and  $t$  represent firms and time in fiscal years, respectively.<sup>10</sup> This specification is relatively standard in the literature on CEO compensation (e.g. Murphy, 1985). The timing of the independent variable on layoff reflects the fact that boards set CEO pay for year “ $t$ ” at the end of year “ $t - 1$ .” We expect, therefore, that if a CEO is rewarded for a layoff last year, then such a reward would be made this year.

I first estimate equation (1) (via OLS) without including any covariates other than the indicator for layoff last year. The results of this bivariate regression appear in column (1) of Table 2. The coefficient on the layoff indicator is 0.378 (translating into a percentage gain of roughly 46 percent), and highly statistically significant (the  $t$ -statistic is in excess of 7). This is a large effect, taken at face value, and suggests that the premium for CEOs making

<sup>9</sup> There are several possible alternative specifications. One could use instead of layoff announcements, changes in the total number employed in the firm (from *Compustat*). This is clouded, however, by other changes in the firm as well as by other hires. Another technique would study the fraction of the workforce laid off. This idea is discussed below.

<sup>10</sup> In the analysis reported in Table 2, I control for “year” effects. There is a problem in doing this if some firms have different fiscal years. For the purpose of creating time indicator variables, I have assigned years equal to the fiscal year if the fiscal year end is after June 1, and the previous year otherwise (effectively assigns the year where most of the fiscal year occurred). If I use actual fiscal years as time indicators, I get virtually identical results.

TABLE 2—BASIC REGRESSION RESULTS: EFFECTS OF LAYOFF ON CEO PAY

	Dependent variable: Log compensation <sup>a</sup>		
	(1)	(2)	(3)
(Any layoff) <sub><math>t-1</math></sub>	0.378* (0.048)	0.134* (0.044)	-0.050 (0.036)
Log(market value of equity)	—	0.319* (0.012)	0.534* (0.033)
(Annual return) <sub><math>t-1</math></sub>	—	0.149* (0.034)	0.070* (0.026)
Other regressors <sup>b</sup>	no	yes	yes
781 firm indicators	no	no	yes
$R^2$	0.019	0.252	0.693

<sup>a</sup> Compensation is the sum of salary, bonus, other compensation, and exercised options collected from various issues of *Forbes Magazine*'s annual compensation survey.

<sup>b</sup> Other regressors are age of the CEO and its square, seniority of the CEO in the firm and its square, seniority of the CEO as CEO and its square, and yearly indicator variables.

\* Significantly different from 0 at the 1-percent level.

Sample size is 3,242. Standard errors are in parentheses.

layoffs is quite large. This result, however, ignores the message of Figure 2, and suggests examining the layoff effect holding constant other factors. In column (2) of Table 2, I estimate the relationship between lagged layoff and CEO pay as specified in equation (1) (again via OLS) while controlling for age of the CEO and its square, seniority of the CEO in the firm and its square, seniority of the CEO as CEO and its square, firm size [measured as log(stock market value)],<sup>11</sup> lagged stock returns, and yearly indicator variables, but ignoring the presence of the fixed component,  $\alpha_i$ , of the error term. The coefficient on lagged layoff declines substantially to 0.134 but is still positive and quite statistically significant. Thus the result of this specification still

<sup>11</sup> Log(stock market value) is more appropriate than the levels specification in this case. See Hallock (1997) for details.

suggests that there are possibly significant personal financial gains to be made for a CEO making a layoff announcement, on the order of 14 percent. Holding constant these additional factors reduce the bivariate effect substantially.

Clearly, however, firm size as well as CEO characteristics do not fully explain the link between previous period layoffs and CEO pay (the  $R^2$  is roughly 0.25), and we need to allow for the possibility that other characteristics of firms and CEOs which have not been included here are confounding our investigation of the relationship between these variables.

To potentially remedy this situation, I make use of the benefits of the panel data I have collected. If one is willing to assume the source of endogeneity arises only through the permanent component of the error term,  $\alpha_i$ ,<sup>12</sup> and not through the transitory component,  $e_{it}$ , then the standard fixed-effects estimation of (1) will yield consistent estimates of the parameters. These results are presented in column (3) of Table 2. Notice that now, the coefficient on the lagged layoff announcement indicator variable is slightly *negative*, but not significant. Once the firm fixed effects are controlled for, the apparent positive premium associated with layoff announcements for CEO pay disappears. The chi-squared value of the Hausman test of the fixed-effects versus the random-effects specification of equation (1) is highly significant ( $p$ -value  $< 0.001$ ), and indicates that inferences based on the final specification [column (3)] are most appropriate. Thus the evidence in Table 2 shows that there is no evidence in these data of a positive premium in CEO pay arising from a layoff announcement. Conditional on being associated with a given firm, a CEO making a layoff announcement will *not*, on average, experience a pay increase the following year.

I also examine these same effects, but allowing for the possibility that different types of layoffs have different effects on CEO pay. It is reasonable to hypothesize, for example, that CEO pay responds differently to temporary

layoff announcements as opposed to permanent layoff announcements. Eighty-six percent of layoffs in my sample were categorized as permanent, 9 percent as temporary, with the remainder uncategorized. If the regressions in Table 2 are rerun on just the data for permanent layoffs, the same basic results emerge. If only temporary layoffs are considered, large negative results of layoffs on CEO pay appear, but these estimates are not precisely measured.<sup>13</sup> Thus, this source of heterogeneity in the treatment does not appear to reveal any positive response of CEO pay to different types of layoff announcements.

It might also be instructive to explore whether larger layoffs have larger effects on CEO pay.<sup>14</sup> To this end, I created a new variable, the ratio of the total number of employees laid off to total employment in the firm that year. This can be included in a regression like that described in equation (1) except that the lagged fraction of employees laid off is an independent variable rather than whether at least one lagged layoff was made. The results of this exercise suggest that it is not the case that, as firms lay off a larger percentage of the total workforce, their CEOs earn higher pay in the following year. If this analysis is repeated on only the firms which make some layoffs (i.e., excluding the zero-valued layoff fractions) the results are universally insignificant.

### III. The Effect of Layoff Announcements on Stock Performance

#### A. Methodology

This section explores whether there is a share price reaction to layoff announcements. The aim is to test whether shareholders (and, therefore, subsequently CEOs who own significant shares in their firms) gain because of management's decision to downsize as much

<sup>13</sup> Additionally, if an indicator for temporary layoff is included in a fixed-effects regression, the coefficient estimate on temporary layoff is negative but insignificant.

<sup>14</sup> The size of the layoffs cannot be determined in 9.8 percent of the firm years. If these firms were excluded from the previous analysis in Table 2, the results do not change in any meaningful way.

<sup>12</sup> I have taken the fixed effects as firm-specific effects—controlling for CEO-specific fixed effects yields qualitatively similar results.



of the popular press has been suggesting (see, for example, Sloan, 1996).<sup>15</sup>

In order to explore the effects of layoff announcements on stock price and the CEO's own wealth, I will employ standard market model event study analysis (see Eugene Fama et al., 1969; Richard S. Ruback and Martin B. Zimmerman, 1984; Stephen J. Brown and Jerold B. Warner, 1985; A. Craig MacKinlay, 1997). The cumulative average excess returns are calculated using equally weighted return data from the Center for Research in Security Prices from the beginning of 1987 through the end of 1995. The estimate of  $\beta$  (from running a least-squares regression of firm returns on market returns) is obtained from trading days  $-500$  to  $-250$ . The goal is to see if there are cumulative abnormal returns over certain event windows around layoff announcement dates and whether such returns are positive or negative.

### B. Results

Table 3, row 1, shows for each of several event windows negative cumulative average excess returns for the 1,287 total layoff announcements studied in this paper. On the event day (time = 0), the share price reaction is, on average,  $-0.4$  percent with a  $t$ -statistic of 6.7. This table also presents cumulative average excess returns for five other event windows; day 0 to day 5, day  $-1$  to day 1, day  $-5$  to day 5, day  $-10$  to day 10, and day  $-20$  to day 20 (the largest event window studied by MacKinlay, 1997). For all layoffs, the cumulative average excess returns vary from  $-0.3$  percent for event windows  $t = -1$  to 1 and  $t = -5$  to 5, to  $-0.7$  percent (days  $-10$  to 10 and days  $-20$  to 20) and are all significant. Figure 3 is a plot of the cumulative average excess returns from day  $-20$  to day 20. Sudip Datta and Mai Iskandar-Datta (1996)

<sup>15</sup> Abowd et al. (1990) do not find a particular price effect (in either direction) of several human resource management decision announcements on stock price. However, they do find that announcements of "permanent staff reductions and shutdowns or relocating" are linked with increases in the variation of returns in event windows near the announcement date.

study layoff announcements for a period inside the sample used in this paper, 1989 to 1991, collected from the *Wall Street Journal Index*. They also find that "contrary to financial press assertions, layoff announcements are interpreted by the stock market as a negative signal." They find an effect of  $-0.8$  percent on the day of the announcement. Richard E. Caves and Matthew B. Krepps (1993) examine layoffs of "nonproduction" employees for the period that also includes the two prior years and find average excess returns at date zero of  $-0.6$  percent. If I restrict my sample to events occurring in 1989–1991, my point estimate of average excess returns on the event date is  $-0.6$  percent ( $t$ -statistic 7.95).<sup>16</sup> Thus, while the excess returns effects of layoffs are precisely measured, and visually apparent in Figure 3, the magnitude of the effect is small and clearly not positive. There does not, therefore, appear to be any direct means by which a CEO can experience a financial windfall from a layoff announcement through his holdings in the firm.

The second and third rows of Table 3 examine cumulative average excess returns for permanent and temporary layoffs separately.<sup>17</sup>

<sup>16</sup> If I restrict my sample in this way for all event windows studied, the negative returns are larger in absolute value than I report for the entire sample in Table 3. If I do the event study analysis by year, the point estimate for average excess returns on the event date are all negative (except for 1987) and are no larger (in absolute value) than 0.76 percent (1990). When examining average excess returns on the event date, there does not appear to be a particular pattern of more (or less) positive excess returns as time progresses through the data set. However, when examining larger event windows, the cumulative average excess returns are significantly positive in the last two years of the sample.

Dan L. Worrell et al. (1991) studied the effects of layoff announcements on the stock market value of the firm for 194 firms covering the years 1979 through 1987 and found a significantly negative effect of layoffs, but the effect was isolated to the days immediately around the event date. Nancy Ursel and Marjorie Armstrong-Stassen (1995) study 57 Canadian layoffs from 1989–1992, and Morley Gunderson et al. (1997) study 214 Canadian layoffs from 1982–1989. Both papers find a negative share price effect.

<sup>17</sup> Eighty-six percent of the layoffs were classified as permanent and 9 percent were classified as temporary. The remaining layoffs could not be classified as either permanent or temporary.

TABLE 3—CUMULATIVE AVERAGE EXCESS RETURNS FOR VARYING EVENT WINDOWS AND TYPES OF LAYOFFS

	Days relative to layoff announcement date					
	$t = 0$	$t = 0$ to 5	$t = -1$ to 1	$t = -5$ to 5	$t = -10$ to 10	$t = -20$ to 20
All layoffs	-0.004 (6.728)	-0.005 (4.284)	-0.003 (3.045)	-0.003 (2.247)	-0.007 (3.590)	-0.007 (3.499)
Permanent layoffs	-0.003 (4.714)	-0.005 (3.294)	-0.002 (1.535)	-0.002 (1.031)	-0.007 (2.905)	-0.007 (2.617)
Temporary layoffs	-0.001 (0.984)	0.003 (0.611)	0.002 (0.009)	0.002 (0.018)	0.001 (0.250)	-0.010 (1.693)

Notes:  $t$ -statistics are in parentheses.

Sources: Cumulative average excess returns are calculated using equally weighted returns from Center for Research in Security Prices from 1987 through 1995 and the standard market model. Layoff events are from *Wall Street Journal* articles as abstracted in Pro Quest's *Newspaper Abstracts* from 1987 through 1995.

Since most layoffs are permanent it is not unusual that the cumulative average excess returns for permanent layoffs look quite similar to those for all layoffs.

I also explored average excess returns by reason for the layoff (not reported in the tables). Of course, the reasons stated in the *Wall Street Journal* articles and the actual reasons for the layoffs may not be exactly the same. However, I categorized 17 reasons for layoffs stated most often in the articles and three deserve attention. In-house merger is the only reason stated that has a consistent positive share price reaction, although it is not always statistically significant. On the day of the announcement, plus the five days following, firms announcing layoffs that were categorized as in-house mergers had an average excess return of 5 percent with a  $t$ -statistic of 3.03. However, on the event date, the reaction is positive, but the  $t$ -statistic is only 1.8. In-house merger may be one of the kinds of layoff reasons we would expect to have a positive share price reaction. If shareholders believe that management is making these mergers to make the firm more lean, then this makes sense. Much of the discussion in the popular press that focuses on the difficult decisions that CEOs need to make to keep American firms strong could be related to this category.

Bankruptcy, on the other had, has just the opposite effect. Clearly, if the market has no other signal that the firm is in financial trouble in advance of a layoff for bankruptcy reasons, then the market would be expected to react

negatively. Of all 17 reasons for layoffs, bankruptcy has the single largest average negative excess return on the event date, -12.3 percent ( $t = 7.8$ ).<sup>18</sup>

Another stated reason for layoffs is closing plant/plant transfer. For this category the stock price drops by 0.4 percent on the day of the announcement ( $t$ -statistic = 1.87) and the cumulative average excess return is -1.3 percent for day of the announcement plus the five days following ( $t = 1.7$ ). Other authors have explored the link between plant closings and share price reaction. David Blackwell et al. (1990) examined the connection between plant closings and financial performance for a sample of 286 plant closing announcements from the *Wall Street Journal* for an older and shorter time period, 1980 through 1984. They found a connection between plant closing announcements and negative abnormal returns, but that the negative abnormal returns are only statistically significant for the cases in which the management defined the reason for the plant closing to be "operations not profitable" as opposed to "consolidation of facilities" (like in-house merger, which I have stated above shows a positive reaction), "labor-management dispute," or "environmental

<sup>18</sup> Note that while the magnitude of the bankruptcy layoff effect is large, this reason for a layoff constitutes only an extremely small fraction of all reasons for layoffs (less than 0.5 percent); thus the effect of layoffs other than bankruptcy is essentially the same as the overall effect.

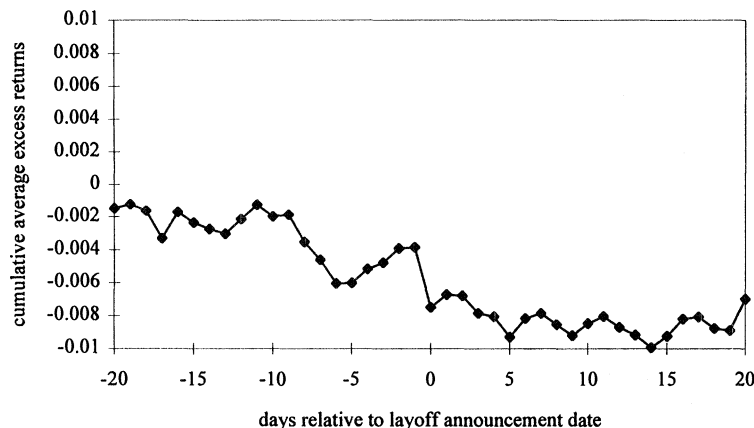


FIGURE 3. CUMULATIVE AVERAGE EXCESS RETURNS

regulations.”<sup>19</sup> The reason studied in this paper most like “labor management dispute” is union strike, where the reaction is also negative, but not significant. Blackwell et al. (1990) conclude that it may not be the announcement that causes the negative share price reaction, but that the announcements may simply reflect declines in demand for the product produced by the firm or bad investments made earlier.

I also investigated whether the results of the event study vary by industry (not reported in the tables). For this analysis, all firms were grouped into their two-digit industries as collected from *Compustat*. In only one case (fabricated metal, extraction machinery, and transfer equipment) is there a positive abnormal return on the event date, but the cumulative average excess returns are negative (and sometimes significant) in slightly larger event windows. Several of the industries have rather large negative average excess returns on the event date, including stone, clay, glass, and

concrete products (-2.0 percent), general merchandise stores (-1.8 percent), and business services (-4.3 percent).

The evidence reported in Table 3 is consistent with the few other authors who have studied the effects of layoffs on stock price, but I use substantially more years and more firms. Although there are qualifications, the general finding is that, on average, and in contradiction to the recent conventional wisdom, there does not appear to be a positive share price reaction to announced firm layoffs. There appears to be a small, but significantly negative, effect of layoff announcements on stock price.

#### IV. Concluding Comments

As increasing numbers of white-collar workers face insecurity in their jobs, high CEO pay has become an even more controversial topic. The perceived wisdom that CEO pay is increasing while average worker pay has been flat can be supported. From 1989 through 1995 the average CEO compensation in real terms has increased between 37 and 76 percent in this sample, depending on how it is measured, while the average worker wage has declined by 3 percent.<sup>20</sup> Like most papers using a lot of

<sup>19</sup> Michael J. Gombola and George P. Tsetsekos (1992) find a strong negative stock price reaction to plant closing announcements in “financially weak” firms but do not for “financially strong” ones. Rajiv Kalra et al. (1994) classify 132 plant closings from 1984 to 1987 as “aggressive” (designed to increase cash flows) or “passive” (symptomatic of bad news) and find positive share price reactions for the former and negative for the latter.

<sup>20</sup> Average weekly wage of production workers from *Economic Report of the President* (1997).

CEO compensation data over a number of years, this paper does not explore the issue of the value of stock options granted. If options are a way for boards to hide compensation from shareholders and this is correlated with layoffs, the results reported in Table 2 may be biased. However, since the market reaction to news of layoffs is generally negative, it seems unlikely that the CEO's options (or newly granted options) would be more valuable if he announced more layoffs. Also, "other" compensation, which includes the value of savings plan contributions and memberships to clubs, yields results consistent with those reported here. I also obtain very similar results using the other two measures of pay as discussed above.

In addition, a cursory examination of the data suggests that CEOs who head firms with layoff announcements in the previous year are likely to have higher pay and larger percentage raises than CEOs who head firms that are not cutting jobs. However, I find that the kinds of firms that make these layoff announcements may also have several other characteristics in common. One of these characteristics is firm size. Firms that are relatively large are relatively more likely to announce layoffs and to pay their CEOs more. In addition, the evidence suggests that there are unobservable characteristics that are correlated with layoff status, implying that a simple regression of compensation on only firm size and layoff status will yield misleading results on layoff status. I find that conditional on both observed and unobserved firm characteristics (via a fixed-effects model), CEOs on average do not have higher pay in years following announced layoffs.

This paper also finds that, on average, the share price reaction to announced layoffs is negative but very small. On the announcement date of a layoff, the average firm loses only 0.4 percent of market value. Given that the average CEO in the sample holds about 2 percent of the stock in the firm for which he works and the median value of the firms is \$2.5 billion over the period, this translates into a loss of about \$200,000 in the value of the shareholdings for the CEO in his own firm. While this is not a trivial amount, it is only a small fraction of the average CEO's holdings in the firm. Also the direct effects of layoffs on pay are

not large. Given that the average CEO had an average yearly total compensation package of \$2.5 million over the sample period, it is difficult to imagine that CEOs generally are influenced by these short-term effects on their own financial well-being when making layoff decisions.

In short, the evidence does not support the idea that CEOs receive financial gains in making layoff decisions. On average, if anything, they appear to experience a small *negative* impact on their own financial well-being from a layoff announcement. However, the magnitudes of the average effects are so small that it is difficult to imagine these "self-interest" effects have much, if any, influence on a given CEO's layoff decision.

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