



American Finance Association

CEO Compensation in Financially Distressed Firms: An Empirical Analysis

Author(s): Stuart C. Gilson and Michael R. Vetsuypens

Source: *The Journal of Finance*, Vol. 48, No. 2 (Jun., 1993), pp. 425-458

Published by: Blackwell Publishing for the American Finance Association

Stable URL: <http://www.jstor.org/stable/2328907>

Accessed: 25/11/2009 11:30

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/action/showPublisher?publisherCode=black>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Blackwell Publishing and American Finance Association are collaborating with JSTOR to digitize, preserve and extend access to *The Journal of Finance*.

<http://www.jstor.org>

CEO Compensation in Financially Distressed Firms: An Empirical Analysis

STUART C. GILSON and MICHAEL R. VETSUYPENS*

ABSTRACT

This paper studies senior management compensation policy in 77 publicly traded firms that filed for bankruptcy or privately restructured their debt during 1981 to 1987. Almost one-third of all CEOs are replaced, and those who keep their jobs often experience large salary and bonus reductions. Newly appointed CEOs with ties to previous management are typically paid *35% less* than the CEOs they replace. In contrast, outside replacement CEOs are typically paid *36% more* than their predecessors, and are often compensated with stock options. On average, CEO wealth is significantly related to shareholder wealth after firms renegotiate their debt contracts. However, managers' compensation is sometimes explicitly tied to the value of *creditors'* claims.

THIS PAPER STUDIES SENIOR management compensation policy in 77 publicly traded firms that filed for bankruptcy or privately restructured their debt to avoid bankruptcy during 1981 to 1987. With the recent decline in the market for hostile takeovers, a number of authors have argued that managers have become increasingly insulated from the effects of poor corporate performance. For example, Jensen and Murphy (1990a, 1990b) study compensation practices in solvent firms and conclude that senior managers on average experience relatively little reduction in their personal wealth when their firms are

* Gilson is from Harvard Business School and Vetsuypens is from Southern Methodist University. This paper has benefited from the comments of Ed Altman, Chris Barry, Jim Brickley, Harry DeAngelo, Linda DeAngelo, Paul Healy, Cliff Holderness, Sherry Jarrell, Stacey Kole, Scott Lummer, Gordon Phillips, Michael Rebello, Richard Ruback, Dennis Sheehan, Richard Sloan, Rex Thompson, Seha Tinic, Peter Tufano, Karen Van Nuys, Jay Westbrook, Mark Zenner, seminar participants at Boston College, Georgetown University, Harvard Business School, MIT, the 1991 NBER Summer Institute Workshop on Corporate Finance, New York University, University of North Carolina, University of Oklahoma, University of Pittsburgh, Purdue University, University of Rochester, The Securities and Exchange Commission, University of Southern California, Texas A & M University, Texas Christian University, conference participants at the 1991 Financial Management Association Meetings and 1991 American Finance Association Meetings, and an anonymous referee and René Stulz (the editor). We are grateful to Kevin Murphy for providing us with some of his data. Financial support was provided by the Division of Research at the Harvard Business School (Gilson) and the Leo F. Corrigan Junior Fellowship at Southern Methodist University (Vetsuypens). Research assistance was provided by Joe Basset and Chris Williams.

unprofitable. Others suggest that even when performance is so poor as to render firms insolvent, incumbent managers go relatively unpunished because current bankruptcy law allows them to retain control over corporate assets (Kallen (1991), Aghion *et al.* (1992), Bradley and Rosenzweig (1992)).¹

In contrast, our results indicate that members of the incumbent senior management team incur significant personal losses when their firms are financially distressed. Almost *one-third* of the CEOs in our sample are replaced in a given year around default, and those who remain often take substantial cuts in their salary and bonus. CEO pay also typically falls when the outgoing CEO is replaced by another incumbent manager; the median inside replacement CEO earns *35% less* than his or her predecessor. In striking contrast, the median outside replacement CEO earns *36% more* than the CEO he or she replaces. Outside replacement CEOs, who represent almost 60% of new CEO hires, also typically receive large grants of stock options as part of their compensation. Failing to distinguish between incumbent managers and outside CEO replacements can thus create the impression that management compensation is unresponsive to corporate performance.

We also find that compensation policy is often an important part of firms' overall strategy for dealing with financial distress, through provisions that change managers' incentives or facilitate negotiations with creditors. Almost a third of our firms lower the exercise price of outstanding executive stock options which have fallen out of the money. Sometimes senior managers' compensation is tied to the successful resolution of the firm's bankruptcy or debt restructuring, or is based on the value of payoffs to *creditors*.

The net effect of these and other changes is to increase the sensitivity of CEO wealth to firms' stock price performance after financial distress; our estimate of the slope coefficient in this relation is several orders of magnitude higher than what Jensen and Murphy (1990a, 1990b) document for solvent firms. On the other hand, earnings performance explains much less of the observed variation in CEO compensation or wealth when firms are financially distressed.

The paper is organized as follows. Section I describes the sampling design and reports sample descriptive statistics. Section II documents the changes in senior management compensation policy that took place in our firms. Section III analyzes how these changes are related to corporate financial distress and default. Section IV presents regression evidence on the sensitivity of CEO wealth to firm performance in financially distressed firms. Section V summarizes our findings.

¹ For example, according to Kallen (1991, p. 468): "Often...one must wonder just what has happened [in a Chapter 11 proceeding]. The answer is simple: the jobs, salaries, and perks of those in the executive suite...have been 'saved'." Similarly, Bradley and Rosenzweig (1992, p. 1088) argue that "managers...effectively invoke Chapter 11 as a defense against unwelcome interference by creditors and as a mechanism for extracting significant wealth from the firm's various holders."

I. Sampling Procedure and Descriptive Statistics

Our sample consists of 77 publicly traded companies that became financially distressed during the period 1981 to 1987. Twenty-nine firms filed for Chapter 11 under the U.S. Bankruptcy Code, and 48 firms privately restructured their debt out of court. Bankruptcy and private restructuring are economically similar events in that each results in the substitution of new financial claims for the firm's outstanding debts to avoid or remedy a default. The primary difference is that in a debt restructuring the firm's claimholders privately recontract, while in a bankruptcy this process is formally supervised by the court. Following Gilson (1989, 1990), we define a debt restructuring as an agreement between the firm and its creditors to avoid bankruptcy or default by either (i) reducing principal or interest payments on the debt, (ii) extending the debt's maturity, or (iii) granting creditors an equity interest in the firm (common stock or securities convertible into common stock).

Our sample is drawn from an initial list of over 200 firms that were financially distressed at some point during 1979 to 1987. We identified these firms from previously published studies of bankruptcy and debt restructuring (Altman (1986), Altman and Nammacher (1987), Gilson (1989, 1990), Hamer (1985)), the COMPUSTAT annual industrial file (firms removed due to bankruptcy or liquidation), and lists of junk bond exchange offers compiled by Salomon Brothers and Drexel Burnham Lambert.

For each firm, our analysis covers a period that includes up to six years on either side of when it filed for Chapter 11 or started to privately restructure its debt (as first reported in *The Wall Street Journal*). During the initial six-year period (hereafter labeled -6 to -1), firms are in general quite unprofitable (see below) but have not yet defaulted on their debt. Including this initial period allows us to distinguish the effects of default from the effects of poor economic performance which led to default. In year 0, firms go into default and start to privately restructure their debt or file for Chapter 11.² At various times during the next five years ($+1$ to $+5$), firms leave bankruptcy or finish restructuring their debt. We define the ending date for bankruptcy as the date on which the firm's reorganization plan is confirmed by the bankruptcy judge, and for private restructuring as the date of the final reference to restructuring activity that appears in *The Wall Street Journal*. In our sample, bankruptcy and private restructuring last for an average of 27 and 17 months (median of 28 and 13 months), respectively; the percentage of sample firms that are still in default therefore declines monotonically over event years $+1$ to $+5$.

² Several bankrupt firms in the sample are in default prior to year 0 because they first tried to privately restructure their debt. However, such restructuring attempts typically last less than a year. Our results do not change materially if we let year 0 represent the beginning of such earlier restructuring activity.

Table I
Selected Sample Characteristics for 77 Publicly Traded Firms
That either Filed for Bankruptcy Under Chapter 11 or
Privately Restructured Their Debt to Avoid Bankruptcy
between 1981 and 1987

Where applicable, variables are based on reported information that most closely predates the start of firms' bankruptcy or debt restructuring. Income and balance sheet data are obtained from the COMPUSTAT Annual Industrial and Research tape and the *Moody's Manuals*. Stock returns are calculated using stock price data reported in the Standard and Poor's *Stock Owner's Guide*. Total capital equals the sum of the book value of total liabilities (excluding deferred taxes and minority interest), the liquidating value of preferred stock, and the market value of common stock. For bankrupt firms, length of financial distress equals the number of months that elapse between a firm's Chapter 11 filing and the date on which its reorganization plan is confirmed by the bankruptcy judge; for firms that privately restructure their debt, this variable equals the number of months that a firm negotiates with its creditors, based on public reports of the restructuring. Reported statistics for length of financial distress are based on the subsample that excludes eight firms whose bankruptcy or debt restructuring was still in progress at the initial writing of this paper. *N* denotes the number of firms.

Characteristic	<i>N</i>	Mean	Median
Book value of assets (\$millions)	69	1027.4	240.1
Sales (\$millions)	69	861.7	205.1
Total liabilities ÷ total capital	59	0.78	0.80
Annual unadjusted common stock return over previous 5 years (annual compounding)	44	-18.1	-16.8
Net income (\$millions)	66	-50.3	-6.3
Length of financial distress (months)	69	20.2	17.0

We obtain most of our data from firms' annual proxy statements and 10-K reports. Firms are retained if at least one of these documents is available for at least four years in each of the -6 to -1 and 0 to +5 periods. We therefore exclude firms that were acquired or liquidated within four years of becoming insolvent. For each event year, CEO compensation, share ownership, and financial statement data are as reported for the most recent fiscal year-end.³ The final sample includes 29 bankruptcies and 48 private restructurings, with starting dates distributed over the years 1981 to 1987.⁴

Table I reports means and medians for selected sample characteristics. Not surprisingly, our firms are generally small, highly levered, and unprofitable.

³ For example, if a firm's fiscal year ends on December 31, and it files for Chapter 11 on April 17, 1985, then CEO compensation for event years -1 and 0 is that reported for the fiscal years ending on December 31, 1984 and December 31, 1985, respectively.

⁴ In every year the number of new private restructurings exceeds the number of new bankruptcies, in part because more corporate filings are missing for bankrupt firms. Gilson *et al.* (1990), who impose less-stringent data requirements in forming their sample of distressed firms, find that bankruptcies were about as frequent as private restructurings over the same period.

The median book value of assets at the end of year -1 is only \$240.1 million, and median sales are \$205.1 million. Moreover, only 53% of our firms were listed on the NYSE in year -1 (not shown), while 35% and 12%, respectively, were AMEX-listed or traded over the counter. The median ratio of total liabilities to total capital is 0.80 (total capital is defined as the sum of the book value of total liabilities, the liquidating value of preferred stock, and the market value of common stock). Mean and median unadjusted annual stock returns for the -6 to -1 period are -18.1% and -16.8% , respectively; mean and median cumulative returns over the same interval (not shown) are -41% and -60% , respectively. Sampled firms are also unprofitable in terms of reported net income. In year -1 , sampled firms report mean and median annual losses of \$50.3 million and \$6.3 million, respectively. Over the -6 to 0 period, the percentage of firms reporting losses (not shown) increases monotonically from 3% in year -6 to 84% in year 0 .

II. Overview of CEO Compensation Policy and Financial Distress

Table II is a capsule summary of changes in senior management compensation policy that took place in our firms during the sample period which in our judgment have a potentially significant impact on senior managers' incentives. We group these changes into five broad categories, based on whether the primary impact of a change was to: create a stronger (positive) association between the wealth of senior managers and shareholders (83% of sampled firms), reduce the level of managers' cash compensation (49%), tie managers' compensation to the outcome of the firm's financial restructuring (20%), encourage greater management continuity and reduce voluntary turnover (17%), or increase the association between the wealth of senior managers and *creditors* (10%).⁵

A. Association between Management Wealth and Shareholder Wealth

Sixty-four of our firms took actions designed to tie senior management wealth more closely to the value of the firm's common stock. In slightly over half (34) of these cases, these actions entailed the grant of new stock or stock options to corporate officers. For example, 18 firms (almost a quarter of the sample) adopted stock option plans for their outside directors; this represents a substantially higher incidence than for solvent firms during the same period (one survey found that only 3% of U.S. industrial firms had stock option or restricted stock plans for their directors in 1985 (*Wall Street*

⁵ Since not all changes in compensation policy may be specifically mentioned in our source documents (even though reported compensation data reflect the impact of these changes), frequencies reported in the table represent lower bounds on the actual level of such activity.

Journal (1990a)). In 9 other cases, new stock or stock options were reserved for management under firms' bankruptcy or debt-restructuring plans.⁶

Figure 1 suggests that most stock option grants take place after firms have defaulted on their debt. Panel A plots the number of options owned by the CEO as a percentage of total common shares outstanding.⁷ Both mean and median option holdings rise over the event period, with most of the increase occurring after year 0. Mean option ownership increases in particular, from 0.4% of outstanding shares in year -3 to 3.7% in year +3. As shown in Section III, this increase primarily reflects option grants to newly arrived CEOs, rather than the accumulation of options by incumbent CEOs. In contrast, Panel B shows that mean and median CEO percentage shareholdings decline over the period that precedes default, and remain generally lower thereafter (except for the last two years, when the mean is influenced by a few extreme outliers).⁸ Of course, changes in total shareholdings will reflect secondary market transactions as well as grants of new stock which are included in managers' compensation.

As an alternative to granting managers new equity claims on the firm, 25 firms (almost a third of the sample) tie managers' wealth more closely to the stock price by lowering the exercise price of outstanding management stock options. These amendments give managers locally stronger incentives to increase shareholder wealth by making option values more elastic with respect to the firm's stock price (variations of this argument appeared in the proxy statements of 10 of the 11 firms which explained the change to shareholders). Almost 90% of sampled option exercise price reductions take place during event years -2 through +3, when firms are insolvent or extremely unprofitable. For all but one of the 25 firms, the options are out of the money immediately prior to repricing. As shown in Table III, the median exercise price prior to repricing is twice the stock price (row 1); upon repricing, the exercise price is typically reduced by about 50% (row 2) and set

⁶ An example in the current sample is Zapata Corporation, which in 1987 adopted a "Special Incentive Stock Plan" for its key managers pursuant to a proposed debt-restructuring agreement. As reported in the company's proxy statement for 1987 (page 33):

Pursuant to the proposed debt restructuring, the Company's bank creditors will receive a substantial portion of the Company's equity securities...and will have a large and continuing interest in the success of the Company over the next few years... (The) inclusion in the restructuring agreement of a provision for the issuance of up to 3,000,000 shares of the Company's Common Stock under a new management incentive stock plan evidences the importance which the banks attach to the continuing efforts of existing management of the Company in achieving a successful restructuring.

⁷ On average, 84% of firms in the sample report stock option plans in a given year. Other stock-based incentive plans offered by our firms include employee stock ownership plans (21% of firms on average), restricted stock plans (15%), and discount stock purchase plans (4%).

⁸ Loderer and Sheehan (1989) observe no significant decline in insiders' percentage stock ownership prior to bankruptcy for a sample of firms that filed for Chapter 11 during 1971 to 1985, whereas Gosnell, Keown, and Pinkerton (1992) report significantly greater insider selling activity for OTC bankrupt firms over the period 1985 to 1987.

Table II
Description of Changes in Management Compensation Policy
in Financially Distressed Firms

Policy changes are classified by their presumed impact on management incentives. Sample consists of 77 publicly traded firms that either filed for bankruptcy under Chapter 11 or privately restructured their debt to avoid bankruptcy between 1981 and 1987. Compensation policy changes are identified from firms' proxy statements and 10-K reports.

Impact of Change in Compensation Policy	No. of Firms	% of Sample
Stronger association between management wealth and shareholder wealth ^a	64	83
Lower level of cash compensation ^b	38	49
Compensation based on outcome of bankruptcy or debt restructuring ^c	15	20
Greater management continuity/less voluntary turnover ^d	13	17
Stronger association between management wealth and creditor wealth ^e	8	10

^a Includes the following specific changes: Board lowers the exercise price of outstanding management stock options (25 firms); stock options are granted to outside directors (18); bankruptcy or debt-restructuring plan reserves new stock or stock options for management (9); cuts in CEO's cash compensation are made up with grants of stock or stock options (5); firm extends maturity date or vesting schedule of outstanding management stock options (3); CEO is paid a bonus based on how many stock options he or she exercises (2); common shares held by the CEO are converted into stock options (1); CEO is granted options with a gradually increasing exercise price (1).

^b Includes the following specific changes: CEO's base salary or promised incentive compensation is reduced or deferred (15 firms); firm terminates pension plan or caps pension plan benefits (14); CEO's compensation is reduced under provisions of U.S. Bankruptcy Code (7); firm suspends payment of directors' fees (2).

^c Includes the following specific changes: CEO is awarded cash bonus or stock options for bringing firm out of bankruptcy or debt restructuring (10 firms); CEO's compensation is increased as reward for "exceptional" performance while firm was distressed (2); CEO's promised compensation is deferred until firm's reorganization plan becomes effective (2); CEO's bonus payments are suspended if firm files for bankruptcy (1).

^d Includes the following specific changes: CEO forfeits deferred compensation or pays financial penalty if he or she leaves firm before a specified date (9 firms); firm adopts incentive plan or grants stock options to encourage management continuity (4).

^e Includes the following specific changes: CEO and creditors receive similar financial claims under bankruptcy or debt-restructuring plan (3 firms); CEO's compensation is made subordinate to creditors' claims (3); CEO receives bonus based on amount of cash distributed to creditors (1); at urging of creditors, senior managers receive a bonus based on proceeds from asset sales (1).

to equal the current stock price (row 3). As a result, almost half (12) of the repriced options become in the money. For the CEOs of these firms, the resulting increase in their potential exercise profits (i.e., if all options were to be exercised at once) is \$182,000 on average, with a median of \$124,400 (row 4).

Little prior evidence exists on how often, or under what circumstances, firms reduce the exercise price of out of the money executive stock options.

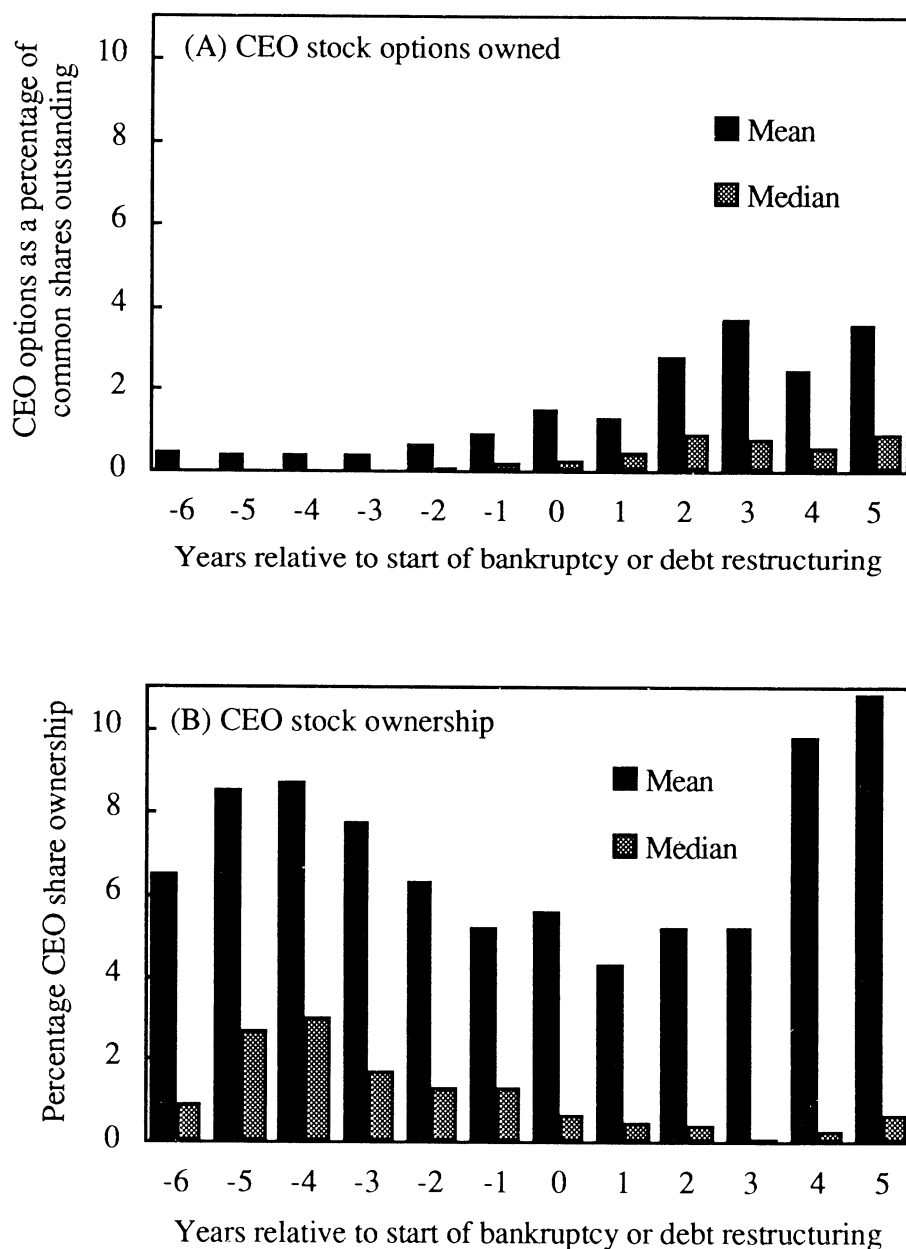


Figure 1. Mean and median CEO stock options as a percentage of total common shares outstanding (A) and percentage CEO ownership of common stock (B), relative to date on which firms file for bankruptcy or start to privately restructure their debt (year 0). Ownership figures are taken from the proxy statement or 10-K report that most closely predates each year in event time. Sample consists of 77 publicly traded firms that either filed for bankruptcy under Chapter 11 or privately restructured their debt to avoid bankruptcy between 1981 and 1987.

Table III
Analysis of Reductions in the Exercise Price of Outstanding Management Stock Options by 25 Firms That either Filed for Bankruptcy or Privately Restructured Their Debt between 1981 and 1987

Stock price data are obtained from Standard and Poor's *Daily Stock Price Record*. Data on option exercise prices and the number of options outstanding are obtained from firms' annual proxy statements. Sample size varies due to missing data. *N* denotes the number of firms.

	<i>N</i>	Mean	Median	Min.	Max.
Option exercise price ÷ common stock price prior to reduction in exercise price	25	3.1	2.0	0.8	19.7
Percentage reduction in option exercise price	25	50.9	47.5	9.8	94.9
Option exercise price ÷ common stock price following reduction in exercise price	25	0.9	1.0	0.4	1.4
Increase in CEO's potential option exercise profits due to reduction in option exercise price (\$1000s) ^a	11	181.7	124.4	0.7	893.8

^a Equals the dollar proceeds that would have been realized if the CEO had immediately exercised all his or her stock options following the reduction in the options' exercise price, less the corresponding proceeds that would have been realized from exercising the options just prior to the reduction. Excluded are firms whose options were out of the money both immediately before and after the reduction in the options' exercise price.

These reductions are quite controversial in practice, because they give the appearance that managers are rewarding themselves for poor performance (*Los Angeles Times* (1991)). Although stock options are repriced relatively often in our sample, past studies of executive compensation have generally assumed a fixed exercise price, consistent with standard theoretical option-pricing models.

There is some (mostly anecdotal) evidence that options are often repriced following general stock market declines, such as the October 1987 Crash (Scholes (1991)). Presumably this reflects directors' desire not to penalize managers for stock price declines beyond managers' control. However, firms in our sample that repriced options significantly underperformed the market in prior years (mean and median stock returns net of the CRSP equally weighted market return were significantly negative in years -6 through -1). Moreover, only one firm mentioned a general stock market decline as the event that triggered its repricing decision.

Another possibility is that our firms repriced options under pressure from creditors. Managers who hold out of the money options have stronger incentives to gamble on risky projects that impose potentially large losses on the firm's fixed claimholders. Gilson (1990) finds that bank lenders often take measures (such as imposing more restrictive loan covenants) to protect their investments in financially troubled firms. However, we could find no evidence that creditors ever directly caused firms to amend their option plans.

Finally, boards who are "captured" by senior management may reprice out

of the money options to limit the personal loss of managers who *are* at fault for the firm's financial difficulties. Our sample provides some weak support for this possibility. Sixty percent (15) of the firms that repriced their options evidently did so without seeking shareholder approval.⁹ If the boards of these firms are more likely to have been captured, then we would expect managers' total compensation to increase by more in these firms in years that options were repriced, relative to other firms. Consistent with this prediction, the average change in the CEO's annual salary and bonus is 23.2% for firms that repriced executive stock options without seeking shareholder approval (in the years that such repricing took place), compared to -6.6% for firms that sought such approval; respective median percentages are 29.0% and -9.8%. However, these differences are only marginally significant (*p*-values of about 20%, under a *t*-test for means and Wilcoxon rank sum test for medians, respectively).¹⁰

B. Level of Cash Compensation

Table II shows that 38 firms in our sample specifically mentioned that they were reducing senior managers' cash compensation. In almost half (15) of these cases managers experienced a permanent or temporary cut in their base salary or promised incentive compensation (typically a cash bonus). In another 14 cases firms either cancelled or capped managers' retirement benefits. Two firms suspended payment of directors' fees. Finally, 7 firms were able to rescind previously promised payments to managers under various provisions of the Bankruptcy Code. Five of these firms rejected management compensation agreements as "executory contracts" (i.e., contracts that obligate both parties to perform future services), one firm invoked Chapter 11's "automatic stay" against legal action by creditors for nonpayment of their claims, and one firm reduced severance payments due the former CEO with the approval of the bankruptcy judge.

Figure 2 suggests that reductions in cash compensation are more pervasive in our sample than implied by the preceding analysis of *announced* changes. Panel A of the table plots the percentage of CEOs who experienced a reduction in their annual cash compensation in each year of the event period (in nominal dollars).¹¹ Reductions are especially concentrated in the four-year

⁹ Of the remaining 10 firms that formally sought shareholders' approval at the annual meeting, 7 specifically proposed to reduce the exercise price of outstanding options, and 3 proposed to adopt a new stock option plan that would entail replacing old options with new options (having a lower exercise price).

¹⁰ We could also find no evidence that firms viewed option exercise price reductions as a substitute for increases in the CEO's other compensation. For example, mean and median salary and bonus changes in years that firms repriced their options are not significantly different from corresponding changes in other years or in other firms.

¹¹ Cash compensation equals the amount reported as "Cash and Cash Equivalent Forms of Remuneration" in firms' proxy statements. Cash compensation mainly consists of salary and bonus payments, but also includes directors' fees, commissions, and other cash payments. We have excluded from cash compensation any reported proceeds from exercising stock options, since exercising options alters the form, rather than the total level, of CEOs' personal wealth.

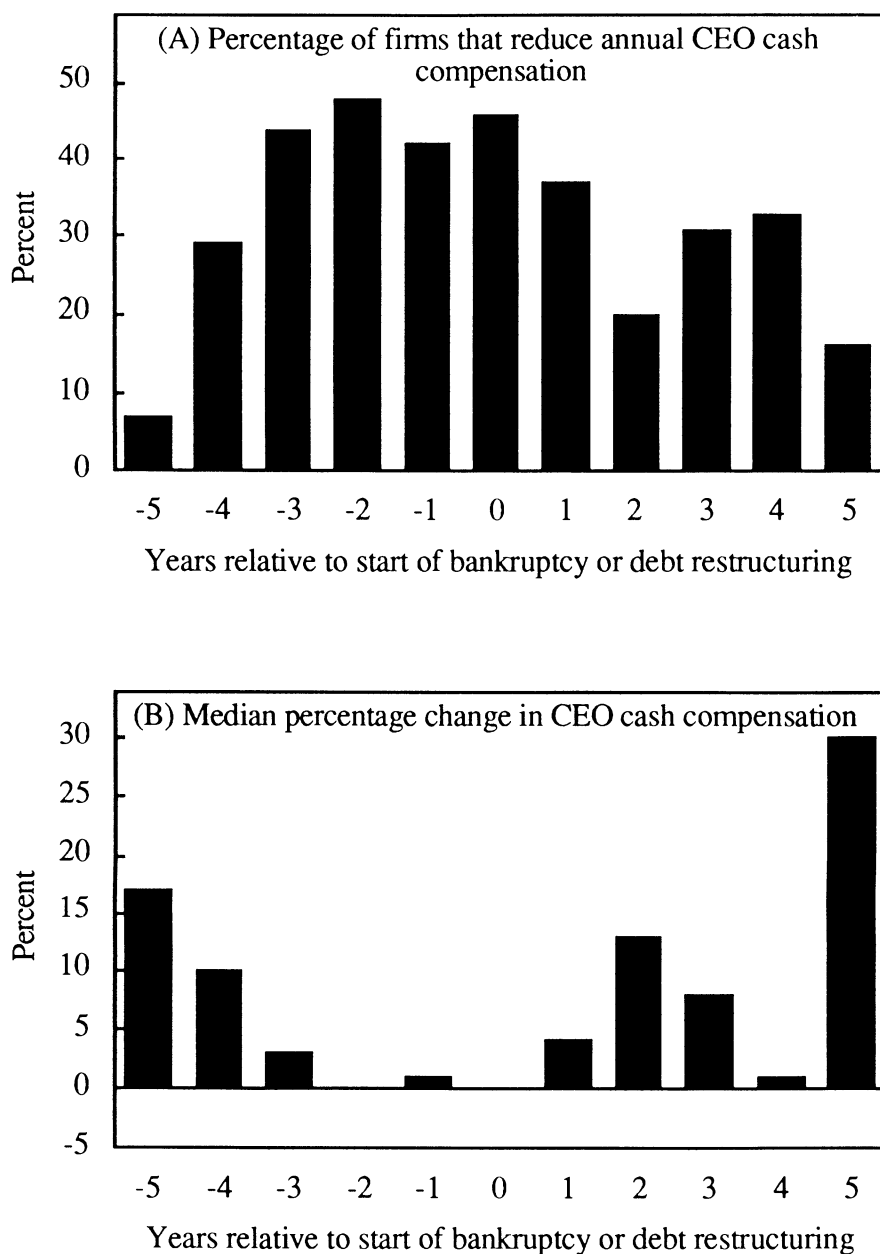


Figure 2. Percentage of firms that reduce annual CEO cash compensation (A), and median annual percentage change in CEO cash compensation (B), relative to date on which firms file for bankruptcy or start to privately restructure their debt (year 0). CEO compensation is expressed in nominal dollars. Sample consists of 77 publicly traded firms that either filed for bankruptcy under Chapter 11 or privately restructured their debt to avoid bankruptcy between 1981 and 1987.

period ending with the first year of bankruptcy or debt restructuring (labeled -3 through 0 in the figure). In any given year during this period, *almost half* of sample firms reduce CEOs' cash compensation; over the entire four-year period, *more than 75%* of firms reduce CEO cash compensation at least once (not shown). Such reductions are often substantial. During years -3 to 0 , 43% of all reductions exceed 25%, and 17% of reductions exceed 50%. In dollar terms, reductions equal \$100,288 on average (median of \$54,665) during this period.

Complementary evidence is presented in Panel B, which shows that the median annual percentage change in CEOs' cash compensation typically falls over the period leading up to bankruptcy or restructuring. For the entire -6 to 0 period the median annual change is 5.5%, compared to only 0.5% for the -3 to 0 period. Corresponding mean change rates (not shown) are 10.9% and 9.2%, reflecting the influence of large positive outliers in the sample.

The above results contrast sharply with observed compensation practices in solvent firms. For example, during 1980 to 1988, reported annual cash compensation for CEOs featured in the *Forbes* Surveys increased at a median annual rate of 12% (mean of 18%), and fell in only 16% of all CEO years (all in nominal dollars).¹²

Additional evidence suggests that part of the decline in CEOs' *total* cash compensation during financial distress reflects reduced payouts under management bonus plans. Figure 3 shows that significantly fewer firms either have active bonus plans or pay a bonus around default (we consider a plan to be "active" if we can infer the existence of a plan from our source documents, even if no bonus is paid; this will understate the true number of active plans if for some reason firms fail to acknowledge that a bonus plan exists).¹³ In year 0 , for example, only 63% of our firms had active bonus plans, and less than a third of these paid a bonus. In contrast, over 90% of all U.S. manufacturing firms had bonus plans during most of the 1980s (The Conference Board). Too few sample firms report the actual size of the bonus (if any is paid) for us to be able to conclusively state whether bonuses also decline as a percentage of total cash compensation.¹⁴

The plot in Figure 3 has several possible interpretations. First, bonus plans typically specify the bonus "pool" (out of which individual awards are made) as a positive function of earnings (Healy (1985)); as reported in Section I, an increasing percentage of sample firms report losses around bankruptcy or

¹² We are grateful to Kevin Murphy for providing us with these figures.

¹³ We broadly define bonus plans to include all incentive compensation plans whose payouts are a specified function of the firm's accounting performance. In addition to straight bonus plans (offered by 64% of our sample firms on average in any given event year), data in Figure 3 include profit sharing plans (14%), deferred compensation plans (13%), performance share plans (4%), and performance unit plans (4%).

¹⁴ For example, during years in which firms were bankrupt or restructuring their debt, fewer than 50% of firms that acknowledged paying a bonus also disclosed the size of the bonus. For these cases the bonus represented an average of 29.7% of CEOs' total cash compensation (median of 28.5%). In years prior to bankruptcy or restructuring (when only 53% of bonus-paying firms disclosed the size of the bonus), the bonus was equal to 30.4% of cash compensation on average (28.6% for the median firm).

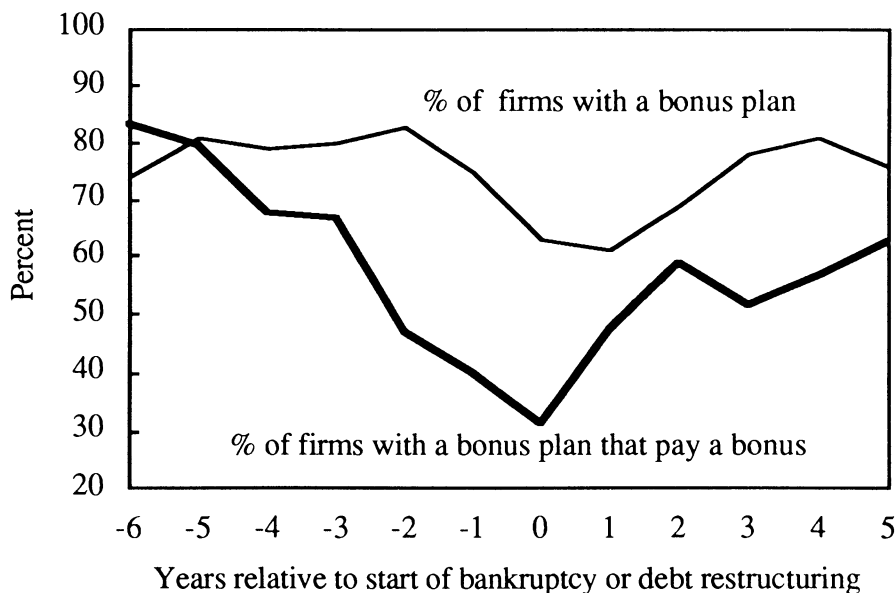


Figure 3. Incidence of bonus plans and bonus plan payouts in financially distressed firms, for various years relative to date on which firms file for bankruptcy or start to privately restructure their debt (year 0). “Bonus plans” are broadly defined to include all earnings-based incentive compensation plans, including actual bonus plans, deferred compensation plans, performance share plans, performance unit plans, and profit-sharing plans. Sample consists of 77 publicly traded firms that either filed for bankruptcy under Chapter 11 or privately restructured their debt to avoid bankruptcy between 1981 and 1987.

restructuring. Firms may also find it more costly to pay bonuses when they become financially distressed. For example, creditors and other stakeholders may be less willing to grant the firm financial concessions if managers’ compensation increases or includes a bonus (DeAngelo and DeAngelo (1991)). In addition, earnings may be considered an unreliable indicator of firms’ true financial condition because managers have especially strong incentives to make income-increasing accounting policy choices when their firms are financially distressed, e.g., to protect their jobs and compensation, or to avoid a default on the firm’s debt covenants.¹⁵ Finally, bonus plans, which generally have call option-like payoffs, may have only limited incentive effects when earnings are negative (i.e., when such plans are deep out of the money). Although in principle managers could be rewarded for minimizing the size of the firm’s losses, none of our firms adopted this practice.

Viewed together, the plots in Figures 2 and 3 raise the interesting issue of whether observed declines in total cash compensation primarily reflect active

¹⁵ Empirical support for the latter possibility is found by DeAngelo *et al.* (1992a) and Sweeney (1991). More generally, studies of compensation policy in solvent firms have found that the frequency of bonus plans, and the sensitivity of cash compensation to accounting performance, are both lower when earnings are more volatile (i.e., less informative about managers’ performance; see Lambert and Larcker (1987) and Sloan (1993)).

recontracting between firms and their CEOs (for example, through downward adjustments in the CEO's base salary), or instead the mechanical operation of existing bonus plans (which pay out less because of the firm's poor financial performance). To investigate this issue, we reconstructed both plots in Figure 2 using only the CEO's base salary in the calculations (i.e., for only those firms that disclosed the CEO's base salary or that clearly paid no bonus).¹⁶ Excluding bonus payments yields similar plots to those presented in Figure 2 (results not shown), consistent with CEOs' base salaries being reset in response to unforeseen changes in firms' financial condition. This result reinforces the impression conveyed by the other entries in Table II that recontracting by firms in financial distress generally involves renegotiation of claims held by managers in addition to those held by creditors.

C. Compensation Based on Outcome of Bankruptcy or Debt Restructuring

Table II shows that 15 firms based part of the CEO's compensation on the outcome of the firm's financial restructuring. In 12 of these cases the CEO was awarded stock options, paid a special bonus, or granted a salary increase as a reward for successfully bringing the firm through its bankruptcy or debt restructuring (even though firms were not bound by any explicit prior agreement to make these awards). When paid in cash, such awards typically represented a large fraction of the CEO's annual base compensation.¹⁷ Four other firms provided their CEOs with incentives to settle with creditors quickly, such as by deferring part of the CEO's compensation until the firm's financial restructuring was completed.¹⁸ These last provisions potentially benefit all the firm's claimholders by reducing legal fees and other costs that increase directly with the amount of time that firms spend renegotiating their debt contracts.¹⁹

¹⁶ Owing to the reporting conventions followed by most firms, in most cases it was not possible to identify the exact amount of the bonus payout (if any was made). For example, only nine firms disclosed this information during their bankruptcy or restructuring.

¹⁷ For example, Pettibone Corporation agreed to pay its CEO a one-time cash bonus of \$100,000 upon final confirmation of the firm's plan of reorganization. His annual base salary was \$200,000.

¹⁸ Two other firms in our sample that put these incentives in place (not included in Table II) are Wheeling-Pittsburgh Steel, whose bank lenders authorized the CEO to propose a bankruptcy reorganization plan without having to obtain directors' consent, and LTV Corporation, which was ordered by the bankruptcy judge to withhold payments due the retiring CEO (Raymond Hay) under a proposed severance agreement until the firm's reorganization plan was confirmed. The judge explained his decision by 'saying that the changes created an incentive for Mr. Hay to help the company emerge from bankruptcy. "I'm sure Mr. Hay realizes that time is money"' (*Wall Street Journal* (1991a)).

¹⁹ It has been suggested that an early exit from Chapter 11 is sometimes hampered by the firm's lawyers, whose total fees cumulate with the length of the bankruptcy and who are generally paid before any of the firm's other claimholders (Stein (1989)). Paying lawyers in the reorganized firm's securities (rather than up front in cash) would help remedy this problem by giving them an interest in the value of the surviving firm and thus an incentive to exit from bankruptcy early. However, only one firm in our sample (CS Group) paid its lawyers this way, by granting them two percent of the common stock issued under its bankruptcy reorganization plan.

D. Management Continuity and Voluntary Turnover

Thirteen firms took actions to encourage senior managers to stay with the firm during its financial difficulties. For example, 5 firms promised to increase (or not withhold) senior managers' compensation if they remained with the firm past some specified date. Four other firms adopted executive severance plans or agreed to forgive interest on loans made to the CEO as long as he or she continued to be employed with the firm. Most of these provisions are targeted at managers who are relatively recent arrivals in their firms (median CEO tenure was only 19 months in the year these provisions were adopted). Partly these provisions may be designed to facilitate negotiations with creditors, who may be more cooperative if they have only had to deal with a single CEO (especially if he or she was appointed by the creditors). Consistent with this view, Gilson (1990) finds that restructured bank loans sometimes contain covenants that restrict CEO turnover. In addition, whether the firm is able to restructure its finances may depend on whether it can concurrently restructure its operations; the latter may have less chance of succeeding if there is excessive turnover of senior management.

E. Association between Management Wealth and Creditor Wealth

Eight firms (10% of the sample) explicitly tied the CEO's compensation to the value of creditors' claims. In a majority of cases the CEO was either awarded financial claims similar to those held by creditors, or paid a bonus based on how much cash creditors received under the firm's reorganization plan or as a result of asset sales. The group is evenly divided between firms that filed for bankruptcy and those that privately restructured their debt. Although the identity of the creditors is generally not disclosed in our source documents, these firms were mostly indebted to banks and other private lenders (70% of the long-term debt owed by the median firm in this subsample was privately placed). These results are consistent with Gilson's (1989, 1990) findings that bank lenders often take a direct role in managing and monitoring financially distressed firms.

F. Summary

Overall, the evidence presented in Table II suggests that firms systematically restructure their management compensation contracts when they experience severe financial difficulty. A majority of our firms respond to financial distress by basing more of senior managers' compensation on long-term stock-based performance measures, and by enacting across-the-board cuts in their cash compensation (including bonuses). Often the form that such recontracting takes appears to be directly related to a firm's default and subsequent financial restructuring. Accordingly, in the following sections we investigate whether financial distress provides a general explanation for observed changes in senior management (CEO) compensation policy in our sample.

III. Analysis of CEO Compensation Policy and Incentives

Financially distressed firms in our sample display several key characteristics. They experience high turnover of their senior managers, they are extremely unprofitable (and as a result face severe cash constraints), and their activities are closely monitored by creditors and bankruptcy judges. In this section we investigate whether these characteristics explain observed changes in CEO compensation and incentives around default.

A. CEO Turnover

Evidence exists that senior management turnover is extremely high in financially distressed firms (Gilson (1989, 1990)). For several reasons we expect compensation policy to change in these firms when they replace their CEOs. CEOs in general will demand a higher salary as compensation for the high risk of job loss and personal stress that comes with managing a troubled company (Jensen and Meckling (1976), *Wall Street Journal* (1991c)). Such upward pressure on salaries will, however, be attenuated when the CEO is held responsible for the firm's financial problems, or is unable to credibly negotiate a higher salary because it is costly to leave the firm (for example, because he or she has a large investment in firm-specific human capital). Because these considerations are relevant only in the case of outgoing incumbent and inside replacement CEOs, we expect them to be paid less than CEOs appointed from outside the firm.

Outside replacement CEOs may also be paid more because they are uniquely skilled at turning around troubled companies (*New York Times* (1983), Dumaine (1990)). Because their personal market values depend critically on the value of their professional reputations, we also expect such managers to bond their performance by taking more of their pay in stock options, bonuses, and other forms of long-run incentive compensation, relative to inside replacement CEOs.

Finally, a financially distressed firm may face strategic or political constraints on how much it can pay the CEO, regardless of his or her performance or skill level (Jensen (1991), DeAngelo and DeAngelo (1991)). For example, creditors may be unwilling to grant the firm concessions under its bankruptcy or debt-restructuring plan unless managers take a cut in their own compensation.²⁰ Similarly, the firm's directors, who risk being sued or losing their jobs during financial distress (Gilson (1990)), may feel pressure to reduce senior managers' compensation to avoid any appearance of self-dealing. We expect these factors to matter less in the case of outside replacement

²⁰ A practitioner with whom we spoke referred to this as "sharing the pain." Creditor discontent over management compensation is often mentioned in financial press accounts of financial restructuring by troubled companies (see, for example, *Wall Street Journal* (1990b, 1990c)). Evidence of a similar phenomenon is found by DeAngelo and DeAngelo (1991), who show that the CEOs of seven financially troubled domestic steel producers experienced an average 18% decline in salary and bonus in years that their companies were seeking large wage concessions from their unions.

CEOs, who are less likely to be "tainted" by the firm's recent financial problems than insiders.²¹

Table IV shows that there is substantial CEO turnover in the sample. In years that firms are bankrupt or restructuring their debt, 30.7% of CEOs are replaced on average; in years that precede or follow these events, mean turnover rates are 8.5% and 22.9%, respectively. In contrast, studies of solvent firms generally report annual CEO turnover rates of less than 10% (Warner *et al.* (1988), Weisbach (1988)).

Table IV shows that almost 60% of all CEO replacements in the sample are outsiders (defined as CEOs who have been affiliated with their firms as directors or managers for less than three years; results are qualitatively unchanged when we use a one- or a two-year cutoff). Moreover, outside replacements represent an increasing fraction of new CEO hires over the event period. In the period that follows a bankruptcy or debt restructuring, almost 75% of replacement CEOs in the sample are outsiders. In striking contrast, Furtado and Rozeff (1987) report that almost 70% of new CEO hires in solvent firms represent *inside* replacements.

The low frequency of inside replacements in our sample is consistent with insiders being blamed for their firms' poor performance, or with little value being placed on their firm-specific human capital (relative to the general management or turnaround skills possessed by outside managers). Some outside appointments may also have been initiated by blockholders, consistent with evidence in Gilson (1990) that blockholders play an important role in the governance of financially troubled firms. In the present sample, almost 20% of outside replacement CEOs are directly affiliated with a blockholder (defined as someone who holds more than 5% of the firm's common stock, excluding managers and creditors).²²

Table V analyzes whether executive turnover affects the level of CEO compensation in the sample. Panel A of the table reports the mean and median change in annual cash compensation received by outside and inside replacement CEOs relative to their predecessors in CEO change years (all in constant 1989 dollars). The total number of CEO changes represented in the table (72) is less than that reported in Table IV, because we exclude CEO changes where the compensation of either the incoming or the outgoing manager is missing for the year of the change. For the sake of comparison, we

²¹ Practitioners tell us privately that bankruptcy judges are also generally less critical of the salaries paid to outside replacement managers. Judges have considerable discretionary power over managers' compensation. For example, in the recent bankruptcy of Drexel Burnham Lambert (not in the sample), the judge ordered senior managers' proposed cash compensation to be cut by 50 percent (*Wall Street Journal* (1991b)). In general, any action taken in Chapter 11 which lies outside the ordinary course of the firm's business (including significant changes in senior managers' compensation) must be approved by the judge. Apparently, judges are less likely to dispute "minor" or technical changes in compensation plans or changes in junior managers' compensation.

²² The sum of all blockholdings in the sample generally increases over the event period, from an average of 8.9% (median of 5.7%) in years -6 to -1, to 18.5% (median of 13.8%) in years 0 to +5.

Table IV
Analysis of CEO Turnover

The mean annual CEO turnover rate equals the percentage of CEOs from the previous year who are no longer CEOs in the current year, averaged over all CEO-years within the indicated period (before, during, or after bankruptcy or debt restructuring). "Outside Replacements" are new CEOs who have been affiliated with their firms for less than three years; "Inside Replacements" are new CEOs who have been affiliated with their firms for more than three years. Sample consists of 77 publicly traded firms that either filed for bankruptcy under Chapter 11 or privately restructured their debt to avoid bankruptcy between 1981 and 1987. For each firm in the sample, data are available up to a maximum of twelve years (six years for the period "Before" bankruptcy or debt restructuring, and six years in total for the two periods "During" and "After" bankruptcy or debt restructuring).

Period Relative to Bankruptcy or Debt Restructuring	Mean Annual CEO Turnover Rate (%)	Total Number of CEO Changes	Total Number of CEO-Years	% of CEO Changes That Are	
				Outside Replacements	Inside Replacements
Before	8.5	27	319	40.7	59.3
During	30.7	58	189	56.9	43.1
After	22.9	38	166	73.7	26.3
All CEO-years	18.3	123	674	58.5	41.5

Table V
Analysis of CEO Cash Compensation

Reported percentage changes in cash compensation for years in which there is CEO turnover represent differences between the incumbent CEO and his or her replacement. "Outside Replacements" are new CEOs who have been affiliated with their firms for less than three years. "Inside Replacements" are new CEOs who have been affiliated with their firms for more than three years. "Original Incumbents" are the CEOs who are in place when firms first enter the sample. Sample consists of 77 publicly traded firms that either filed for bankruptcy under Chapter 11 or privately restructured their debt to avoid bankruptcy between 1981 and 1987. Cash compensation is expressed in constant 1989 dollars. For each firm in the sample, data are available up to a maximum of twelve years (six years for the period "Before" bankruptcy or debt restructuring, and six years in total for the two periods "During" and "After" bankruptcy or debt restructuring). *N* denotes the number of firm-years.

Period Relative to Bankruptcy or Debt Restructuring	Years in Which There Is								
	CEO Turnover						No CEO Turnover		
	Outside Replacements			Inside Replacements			Original Incumbents		
	<i>N</i>	Mean	Median	<i>N</i>	Mean	Median	<i>N</i>	Mean	Median
Panel A: Percentage Change in Cash Compensation									
Before	8	58.1	16.7	14	-4.8	-5.3	182	3.3	0.4
During	20	27.0	36.3	13	-19.8	-34.5	44	6.3	-3.3
After	15	13.7	3.8	2	16.4	16.4	28	4.3	-2.4
Panel B: Level of Cash Compensation (\$Thousands)									
Before	8	854	320	14	322	230	182	426	349
During	20	472	346	13	235	190	44	354	273
After	15	292	161	2	446	446	28	326	225

also report the mean and median annual percentage change in cash compensation of CEOs who first enter the sample at the beginning of the event window ("original incumbents"); the size of this last subsample obviously declines over time due to CEO resignations.

Evidence in Table V suggests that CEO turnover is associated with a dramatic shift in observed CEO pay levels. As predicted, outside replacement CEOs are paid substantially more than insiders. As shown in Panel A, the median outside replacement is paid 36.3% more than his or her predecessor (mean increase of 27.0%) in years that firms are bankrupt or restructuring their debt. In contrast, the median inside replacement CEO is paid 34.5% less than his or her predecessor (mean decrease of 19.8%). Both means and medians are significantly different at the 10% level using a *t*-test and Wilcoxon rank sum test, respectively. During this same period, the median original incumbent CEO experiences a 3.3% decline in his or her annual cash compensation (mean increase of 6.3%). Qualitatively similar differences obtain for the preceding period, when firms are highly unprofitable but not yet in default or bankrupt.

Consistent with results in Panel A, Panel B reports that mean and median levels of cash compensation are also higher for outside than inside replacement CEOs in the first year of their tenure.²³ In years that firms are bankrupt or restructuring their debt, the median outside replacement CEO is paid \$346,000, while the median inside replacement receives \$190,000 (both in constant 1989 dollars); corresponding mean levels are \$472,000 and \$235,000. Similar results hold for the prior period.

As argued earlier, salary changes reported in Table V are consistent with insiders being punished for their firms' poor performance or being perceived as less productive. Alternatively, insiders may be paid less than their marginal product because financial distress (and the cost of seeking alternative employment) puts them at a bargaining disadvantage relative to outsiders. We test these hypotheses through a regression analysis of changes in cash compensation for the subsample of inside replacement CEOs. Salary and bonus changes are regressed against two variables: the length of the CEO's past affiliation with the firm (as a proxy for his or her firm-specific human capital), and a 0–1 dummy variable that equals one for CEOs who previously ranked no higher than vice-president (on the grounds that CEOs that were junior managers prior to being promoted are less likely to be blamed for their firms' poor performance). Inside replacement CEOs serve with their firms for 12 years on average (median of 9 years) before becoming CEO, and 38% previously rank no higher than vice-president. Under the above hypotheses, changes in inside replacement CEOs' cash compensation should be inversely

²³ However, level comparisons may be less informative because the firm's choice between inside and outside replacements could be governed by factors which also affect the level of pay in that firm. For example, evidence exists that smaller firms are more likely to replace their CEOs with outsiders (Furtado and Rozeff (1987)). Since smaller firms also typically pay lower salaries, reported salaries of outside replacement CEOs will be biased downwards relative to inside replacements' salaries (in fact this particular bias operates against our finding the differences that we report in Panel B of the table).

related to the length of their prior affiliation, and higher for CEOs promoted from junior management. However, neither variable has significant explanatory power.²⁴

Another possible explanation for our findings is that salary is an increasing function of age, and junior managers promoted to CEO from inside the firm are younger than the outgoing CEO (or outside replacement CEOs). However, inside replacement CEOs are only five years younger than outgoing CEOs on average; this is statistically indistinguishable from the average age difference between outside replacement and outgoing CEOs of four years.

Finally, 24 outside replacement CEOs (56% of the total in Table V) are either professional turnaround managers (7) or individuals with a professional background in the same or a related industry (17). We assume that these individuals are the most likely to have an expertise in corporate turnarounds (if such expertise indeed exists or has any value). As a group, these managers are paid 39% more on average (52% at the median) than other outside replacement CEOs. These differences are significantly different from zero at the 17% and 12% levels, respectively (using a *t*-test for means and Wilcoxon rank sum test for medians). Corresponding differences for professional turnaround managers alone are also positive, but are not statistically significant. Although these comparisons are based on a relatively small number of observations, they suggest that at least some outsiders are paid more because they possess skills and knowledge that are particularly valued by troubled firms.

CEO turnover also accounts for at least part of the observed sample time-series variation in equity ownership and bonus plan payouts discussed earlier (and shown in Figures 1 and 3). Table VI (Panel A) shows that the cumulative increase in CEO option ownership over the event period reflects the gradual replacement of original incumbent CEOs (who own no stock options at the median) by new CEOs (whose compensation generally includes stock options). Outside replacement CEOs generally hold more stock (Panel B) and stock options than inside replacements, consistent with insiders being less well diversified (because of their investment in firm-specific human capital) or less skilled (and therefore being paid less in both cash and stock options). Consistent with our earlier prediction, outside replacement CEOs with presumed expertise in turnarounds receive more stock options than either insiders or other outsiders (not shown in the table). In the year they join the firm, turnaround managers receive options representing 3.9% of

²⁴ Inside replacement CEOs in our sample typically are paid more as CEO than they were as more junior managers; the mean increase in their cash compensation in the year of a CEO change is 31.4% (median of 19.1%). When we estimate the regression using this alternative definition of inside replacement salary and bonus changes, the length of tenure variable is still insignificant, but the coefficient on the junior manager dummy is negative and significant (*p*-value of 0.07). One interpretation of the negative sign is simply that junior managers have less valuable skills.

Table VI
Analysis of CEO Ownership of Stock Options and Common Stock

“Outside Replacements” are new CEOs who have been affiliated with their firms for less than three years. “Inside Replacements” are new CEOs who have been affiliated with their firms for more than three years. “Original Incumbents” are the CEOs who are in place when firms first enter the sample. Figures for outside and inside replacements are based on the first proxy statement or 10-K report that follows a new CEO’s appointment that contains information about his or her ownership of stock and options. Stock option holdings are defined as the number of common shares issuable upon exercise of the options as a percentage of the total number of shares outstanding. Sample consists of 77 publicly traded firms that either filed for bankruptcy under Chapter 11 or privately restructured their debt to avoid bankruptcy between 1981 and 1987. For each firm in the sample, data are available up to a maximum of twelve years (six years for the period “Before” bankruptcy or debt restructuring, and six years in total for the two periods “During” and “After” bankruptcy or debt restructuring). *N* denotes the number of firm-years.

Period Relative to Bankruptcy or Debt Restructuring	Years in Which There Is								
	CEO Turnover						No CEO Turnover		
	Outside Replacements			Inside Replacements			Original Incumbents		
	<i>N</i>	Mean	Median	<i>N</i>	Mean	Median	<i>N</i>	Mean	Median
Panel A: Percentage Stock Option Holdings									
Before	6	3.0	1.0	14	0.4	0.0	176	0.4	0.0
During	12	1.8	0.7	8	1.1	0.4	40	1.5	0.0
After	11	5.6	0.9	1	0.4	0.4	26	3.0	0.0
Panel B: Percentage Common Stock Holdings									
Before	8	3.8	0.1	14	2.3	0.6	179	7.9	2.1
During	19	2.1	0.1	13	0.3	0.0	41	11.0	4.7
After	15	12.7	0.1	2	0.0	0.0	28	8.8	4.7

their firms’ common stock on average, compared to 0.6% for other outsiders (this difference is statistically significant at the 4% level).

Evidence in Table VII indicates that observed declines in the frequency of bonus plans and bonus plan payments around default are also partly traceable to CEO turnover (and the high frequency of outside replacements in the sample). Over the event period, firms that appoint outside replacement CEOs are increasingly less likely to have a bonus plan (Panel A) or pay a bonus under an existing plan (Panel B). This evidence is only suggestive, however, since most of these differences are statistically insignificant due to the small number of observations.

B. Cash Constraints

Figures 1 through 3 show that CEOs of our firms experience salary and bonus reductions and increases in their option holdings over time. Since

Table VII
Analysis of CEO Bonus Plans

"Outside Replacements" are new CEOs who have been affiliated with their firms for less than three years. "Inside Replacements" are new CEOs who have been affiliated with their firms for more than three years. "Original Incumbents" are the CEOs who are in place when firms first enter the sample. Figures for outside and inside replacements are based on the first proxy statement or 10-K report that follows a new CEO's appointment that contains information about his or her compensation. Sample consists of 77 publicly traded firms that either filed for bankruptcy under Chapter 11 or privately restructured their debt to avoid bankruptcy between 1981 and 1987. For each firm in the sample, data are available up to a maximum of twelve years (six years for the period "Before" bankruptcy or debt restructuring, and six years in total for the two periods "During" and "After" bankruptcy or debt restructuring). *N* denotes the number of firm-years.

Period Relative to Bankruptcy or Debt Restructuring	Years in Which There Is					
	CEO Turnover				No CEO Turnover	
	Outside Replacements		Inside Replacements		Original Incumbents	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Panel A: Percentage of Firms with a Bonus Plan						
Before	6	75.0	8	57.1	137	69.2
During	13	61.9	6	46.2	32	62.7
After	7	46.7	2	66.7	24	66.7
Panel B: Percentage of Firms with Plans That Pay a Bonus						
Before	4	66.7	5	62.5	84	61.3
During	8	61.5	6	100.0	11	34.4
After	3	42.9	1	50.0	11	45.8

financially distressed firms almost by definition have insufficient cash on hand to pay their creditors, one seemingly plausible explanation for these results is that firms face binding cash constraints. CEOs in general may be forced to take cuts in their cash compensation; CEOs who are not held responsible for their firms' financial problems may in addition be awarded new stock options (which do not affect the firm's cash position) to make up for any loss in salary and bonus.

However, this explanation does not appear to generalize to our firms. As shown above, reported CEO cash compensation typically *increases* when firms hire outside replacements. We could find no evidence that such firms were less cash constrained than other firms (based on comparisons of mean and median stock returns, earnings, and the book value of cash and marketable securities observed at various points in event time). As well, potential reductions in the CEO's cash compensation would appear to be too small in dollar terms to afford our firms any meaningful financial relief: the present

value of the original incumbent CEO's cash compensation (assuming a perpetuity and 10% discount rate) is less than 2% of the book value of total liabilities for the median firm.

As a more direct test of whether cash constraints systematically affect compensation policy in our firms, we compare changes in CEOs' cash compensation between different periods in event time using a 2×2 contingency table analysis (results not shown). As in Table IV through VII, we partition the entire event window into three nonoverlapping intervals (before, during, and after bankruptcy or debt restructuring). If cash constraints are binding either before or during a bankruptcy or debt restructuring (but are only temporary), salary and bonus reductions in either period should be followed by increases in subsequent periods. Such evidence would also be consistent with the possibility (suggested to us by practitioners) that the CEO's salary is sometimes reduced while the firm negotiates with creditors to give him or her an incentive to settle early (other examples of such incentives were presented in Table II).²⁵

We find only mixed evidence of such substitution in the sample. CEOs who receive below-median (cumulative percentage) increases in cash compensation before or during bankruptcy or restructuring (when firms are likely to be most cash constrained) are no more likely to receive above-median increases in cash compensation in subsequent periods (independence cannot be rejected at conventional significance levels). On the other hand, CEOs whose cash compensation increases at less than the median rate during bankruptcy or restructuring experience above-median increases in their percentage *option holdings* over the same interval (independence is rejected at the 11% level). In addition, CEOs who remain in the sample for all three periods, and who receive below-median increases in their cash compensation before bankruptcy or restructuring, experience above-median increases in their options holdings after these events (independence is rejected at the 6% level). Evidently, CEOs who take large cuts in their compensation prior to bankruptcy or restructuring, and who survive the recontracting process, are rewarded with substantial options grants.²⁶

²⁵ For example, the CEO of Mobile Home Industries was paid an annual salary of \$120,000 prior to the firm's bankruptcy filing. Immediately after the filing, his salary was reduced to \$80,400, with the promise that it would be restored to its original level once the firm's reorganization plan was confirmed.

²⁶ A specific example of such substitution in the sample is provided by the debt restructuring of Zapata Corporation (see footnote 6). As reported in Zapata's 1987 proxy statement (page 32):

In formulating the New Plan, the (Company) was mindful that during three of the last four fiscal years of the Company there have been minimal increases in key executive salary levels and few awards of cash incentive payments. It was also anticipated that the terms of the Company's debt restructuring would restrict the Company's ability to provide salary increases and cash bonuses in the future. . . . The New Plan, by providing incentives which do not involve cash payments by the Company, meets the Company's specific needs.

C. Bankruptcy vs. Private Restructuring

Compensation policy in our sample also apparently depends on whether firms recontract with their creditors in Chapter 11 or out of court. In particular, substantially fewer bankrupt firms have bonus plans (or pay a bonus) around default. In year 0, fewer than 50% of bankrupt firms in the sample have a bonus plan, and only 17% of these pay a bonus; for firms that privately restructure, the corresponding percentages are 70% and 35%. These differences do not appear to be explained by underlying differences in earnings or performance used in calculating the bonus; accounting profit rates (based on net income or earnings before interest and taxes), the frequency of reported losses, and stock returns are not significantly different between the two groups of firms over various intervals relative to the start of recontracting.²⁷ An alternative explanation may be that firms in bankruptcy are under greater pressure to reduce managers' cash compensation or eliminate bonuses, possibly due to the actions of the bankruptcy judge (e.g., *Wall Street Journal* (1991a, 1991b, 1992)). We would also expect bonus plans to be less important in bankrupt firms because such firms typically have fewer intangible assets, relative to firms that privately restructure (Gilson *et al.* (1990)). Principal agent theory suggests that firms with more intangible assets (such as growth opportunities) derive greater benefits from offering their managers incentive compensation because the value of these assets depends more on unobservable actions by the managers (see Smith and Watts (1982); evidence consistent with this prediction (for solvent firms) is found by Kole (1992)).

IV. Regression Analysis of CEO Incentives

The preceding analysis shows that financially distressed firms implement a wide array of changes in CEOs' compensation, but does not answer whether *collectively* these changes have a meaningful impact on managerial behavior (and hence corporate policy). In this section we use regression analysis to assess the bottom-line impact of financial distress on CEO incentives. For solvent firms, Jensen and Murphy (1990a, 1990b) argue that the typical CEO's personal wealth depends very little on his or her firm's recent financial performance (measured by stock returns or accounting profitability). This association may be much stronger for financially distressed firms, given our

²⁷ In contrast, Gilson *et al.* (1990) find that bankrupt firms were significantly less profitable than firms that privately restructured. This difference between the two studies most likely reflects differences in sampling criteria. Our requirement that a minimum number of corporate filings be available over time for each firm will tend to exclude less profitable (bankrupt) firms that made fewer filings or that were soon liquidated or acquired after leaving bankruptcy.

evidence that CEOs experience significant salary and bonus reductions, and are often granted new stock options (sometimes with lower exercise prices), when their firms have performed extremely poorly.

Our regressions relate changes in CEO compensation and wealth to stock- and earnings-based measures of firms' performance. Regressions are estimated with two alternative dependent variables: (i) the annual change in the CEO's current cash compensation (salary and bonus), denoted $\Delta(\text{CEO cash compensation})$, and (ii) the annual change in the CEO's total wealth, denoted $\Delta(\text{CEO total wealth})$. The second variable equals the sum of the annual change in the CEO's cash compensation, plus the change in the value of stock options and common stock held at the beginning of the year (adjusted for dividends and stock splits). Dependent variables and performance measures are all converted into constant 1989 dollars.

$\Delta(\text{CEO cash compensation})$ depends only on the firm's current compensation policy (i.e., salary and bonus plus any grants of options or shares), while $\Delta(\text{CEO total wealth})$ reflects both current compensation policy and changes in the value of previously acquired stock and options. Our use of $\Delta(\text{CEO total wealth})$ is motivated by prior research which suggests that changes in equity-related wealth have a significant impact on CEO incentives (Jensen and Murphy (1990a, 1990b)).

Since CEO wealth by definition includes the *present value* of cash compensation, $\Delta(\text{CEO total wealth})$ should also include the capitalized value of any permanent changes in salary and bonus. We include only the current year's salary and bonus change because high CEO turnover in the sample makes the choice of an appropriate discount horizon highly problematic, and because cuts in cash compensation may be subsequently reversed when firms' financial condition improves.

We approximate the annual change in the value of CEO stock options as the number of options held at the beginning of the year, multiplied by the annual change in the stock price times 0.6. The scale factor of 0.6 approximates the slope of the option-pricing function, and is found to work relatively well in large sample simulations performed by Jensen and Murphy (1990b); our results are largely insensitive to variation in this factor over a reasonable range of values (0.4 to 0.8).

For several reasons, this approximation is preferable to valuing options using standard theoretical option-pricing models. First, stock return variances are highly nonstationary around financial distress (Baldwin and Mason (1983)), making any estimate of option prices unreliable. Second, explicitly calculating changes in the value of options requires information on the number of options granted and exercised, which is often unreported by our firms. Third, given the high level of CEO turnover in the sample, it is highly uncertain when (or whether) the options will be exercised. Fourth, standard option-pricing models assume a fixed exercise price, which is inconsistent with our earlier evidence that sample firms frequently reprice out of the money options. Finally, our approximation creates a bias *against* finding an

increase in the sensitivity of CEO wealth to shareholder wealth, thereby strengthening certain results reported below.²⁸

A. Sensitivity of CEO Cash Compensation and Wealth to Stock Price Performance

Panel A of Table VIII presents estimated regressions that relate $\Delta(\text{CEO cash compensation})$ and $\Delta(\text{CEO total wealth})$ to current period stock price performance, denoted $\Delta(\text{shareholder wealth})$. Stock price performance is defined as the annual change in the market value of the firm's common stock (adjusted for dividends and converted into constant 1989 dollars). Regressions do not include an intercept term, consistent with how we model CEO incentives.²⁹ When an intercept is included the associated coefficient is statistically insignificant and other results are qualitatively unchanged. Re-

²⁸ The annual change in the CEO's wealth due to changes in the value of his or her option holdings equals

$$(Q + \Delta Q)(P + \Delta P) - QP + \text{option exercise profits}$$

where Q and P are the beginning-of-year number and unit value of the options, and Δ is the annual difference operator. Option exercise profits have to be added back because exercising options converts one form of wealth (options) into another (cash) without affecting the level of wealth. Rearranging this expression yields

$$Q\Delta P + \Delta Q(P + \Delta P) + \text{option exercise profits}$$

The first term in the expression represents the change in CEO wealth due to changes in the value of options held at the beginning of the year. In our estimates, ΔP is replaced by the annual change in the stock price times 0.6. Since few CEOs in our sample exercise stock options (options are either out-of-the money or so recently granted that exercise is premature), ΔQ , and therefore the sum of the second and third terms, is generally nonnegative. Thus, our estimate of the change in CEO wealth due to options ($Q\Delta P$) is biased downwards relative to the true change in CEO wealth. This bias is reinforced by our use of the constant multiplier 0.6. When the firm's stock price increases (which occurs more often in our sample after a bankruptcy or debt restructuring), the slope of the true option-pricing function (and thus the sensitivity of CEO wealth to shareholder wealth) rises, whereas we assume it to be unchanged (at 0.6).

²⁹ We assume the following linear relation between CEO total wealth and shareholder wealth (for the i th firm in year t):

$$(\text{CEO total wealth})_{it} = \alpha_i + b(\text{shareholder wealth})_{it} + e_{it}.$$

The intercept term α_i represents the effects of various omitted factors which also affect the CEO's wealth, and which are assumed to be relatively unchanging over his or her tenure (firm size, years of experience, native ability, etc.). To obtain unbiased estimates of b from this model using pooled data, the regression must include a separate intercept dummy variable for each firm. Instead, we follow Jensen and Murphy (1990a, 1990b) and estimate the above relation in first-differences:

$$\Delta(\text{CEO total wealth})_{it} = b \Delta(\text{shareholder wealth})_{it} + u_{it}.$$

The slope coefficient b represents the sensitivity of CEO wealth to the firm's stock price performance, and is assumed to be the same for all CEOs.

sults are also robust to including lagged stock price performance, adjusting for possible heteroskedasticity of the error term, and including a dummy variable for each calendar year to control for potential clustering of firm-years in calendar time.³⁰

The regressions also include two sets of interactive terms. The dummy variables DURING and AFTER control for shifts in the relation between CEO compensation or wealth and firm performance over event time (a possibility suggested by Figures 1 through 3). These variables equal 1 for firm-years that fall during or after a bankruptcy or debt restructuring, respectively, and 0 otherwise; in prior years both dummies are set equal to 0. OUTSIDER and INSIDER are dummy variables that control for changes in incentives due to CEO turnover (suggested by Tables V through VII). OUTSIDER equals 1 if the current CEO entered the sample as an outside replacement, and 0 otherwise; INSIDER is defined analogously for inside replacements. For original incumbent CEOs both dummies are set equal to 0. Tests of statistical significance within subsamples defined by these interactive dummies are based on an *F*-test of the null hypothesis that the sums of the relevant regression coefficients are significantly different from zero.³¹

The first regression in Panel A indicates the general absence of a positive relation between CEO cash compensation and stock price performance in our firms. In years during and after bankruptcy or restructuring, this relation is not significantly different from zero for all three types of CEOs. However, in the period that precedes bankruptcy or restructuring, the relation is positive and significant for both kinds of replacement CEOs. The decline in pay-performance sensitivity from the first to the second subperiod roughly corresponds to the declining use of bonus plans shown in Figure 3. However, evidence below suggests that stock returns are not simply a proxy for accounting profits (which appear in bonus plan formulae).

The second regression in Panel A indicates generally that stock price performance and changes in CEO *total wealth* are strongly, positively related in our firms. The implied sensitivities are significantly greater than zero in all three subperiods for both original incumbent and outside replacement CEOs. Since our definition of CEO total wealth includes the value of CEO stock and stock options, these last results are not surprising; as shown in Table VI, original incumbents and outside replacements hold nontrivial

³⁰ Heteroskedasticity may be present because regressions relate *dollar* changes in CEO wealth and shareholder wealth, which may increase with the level of each variable. However, we could find no evidence of this by visually inspecting the residuals, and the results are qualitatively unchanged when we estimate weighted least squares regressions, scaling all variables by the absolute value of the annual stock price change.

³¹ For example, to assess the significance of the relation between outside replacement CEOs' wealth and firm performance in years that follow bankruptcy or restructuring, we test whether the sum of the estimated coefficients on (i) $\Delta(\text{shareholder wealth})$, (ii) $\text{OUTSIDER} \cdot \Delta(\text{shareholder wealth})$, and (iii) $\text{AFTER} \cdot \Delta(\text{shareholder wealth})$ is significantly different from zero.

Table VIII
Estimated Coefficients from Ordinary Least Squares
Regressions Relating Annual Changes in CEO Cash
Compensation or Wealth to Corresponding Annual Changes in
Shareholder Wealth and Net Income

Regressions are based on pooled time series and cross-sectional data for 77 publicly traded firms that either filed for bankruptcy under Chapter 11 or privately restructured their debt to avoid bankruptcy between 1981 and 1987. $\Delta(\text{CEO cash compensation})$ is the annual change in the CEO's reported cash compensation, excluding profits from exercising stock options. $\Delta(\text{CEO total wealth})$ is the sum of $\Delta(\text{CEO cash compensation})$ and the corresponding annual change in the value of the CEO's stock options and his or her inside stockholdings. $\Delta(\text{shareholder wealth})$ is the annual change in the market value of the firm's outstanding common stock. $\Delta(\text{net income})$ is the annual change in reported net income (before extraordinary items). DURING and AFTER are dummy variables that identify whether an observation occurs during (DURING = 1, AFTER = 0), after (DURING = 0, AFTER = 1), or before (DURING = AFTER = 0) a firm's bankruptcy or debt restructuring. OUTSIDER and INSIDER are dummy variables that identify whether a CEO is an outside replacement (OUTSIDER = 1, INSIDER = 0), inside replacement (OUTSIDER = 0, INSIDER = 1), or the original incumbent (OUTSIDER = INSIDER = 0). All nominal variables are converted into constant 1989 dollars using the Consumer Price Index. Absolute values of t -statistics are shown in parentheses.^a

Independent Variable	Dependent Variable	
	$\Delta(\text{CEO cash compensation})$	$\Delta(\text{CEO total wealth})$
Panel A: Performance Measured as Change in Real Shareholder Wealth		
$\Delta(\text{shareholder wealth})$	0.0001 (0.8)	0.0263 (13.4) ^b
DURING* $\Delta(\text{shareholder wealth})$	-0.0087 (1.6)	-0.0007 (0.1)
AFTER* $\Delta(\text{shareholder wealth})$	-0.0010 (2.0) ^c	0.0330 (2.7) ^b
OUTSIDER* $\Delta(\text{shareholder wealth})$	0.0008 (1.8) ^d	-0.0102 (1.0)
INSIDER* $\Delta(\text{shareholder wealth})$	0.0010 (2.2) ^c	-0.0373 (3.3) ^b
Adjusted R^2	0.004	0.329
Sample size	429	413
Panel B: Performance Measured as Change in Real Net Income		
$\Delta(\text{net income})$	0.0004 (1.0)	0.0963 (11.1) ^b
DURING* $\Delta(\text{net income})$	0.0001 (0.1)	-0.0524 (4.2) ^b
AFTER* $\Delta(\text{net income})$	0.0013 (1.6)	-0.0425 (2.3) ^b
OUTSIDER* $\Delta(\text{net income})$	-0.0002 (0.5)	-0.0844 (7.4) ^b
INSIDER* $\Delta(\text{net income})$	-0.0004 (0.8)	-0.0441 (3.8) ^b
Adjusted R^2	0.002	0.277
Sample size	324	313

amounts of their firms' common stock and stock options, respectively. The total wealth of inside replacement CEOs, on the other hand, is not significantly related to their firms' stock price performance until the last subperiod. For all three types of CEOs, the relation between total wealth and stock price performance is strongest in the last subperiod (i.e., years after bankruptcy or restructuring). For example, for outside replacement CEOs, the implied slope coefficients that obtain in years before, during, and after bankruptcy or restructuring are, respectively, 0.0161, 0.0154, and 0.0491.³²

In dollar terms, this last result implies that when shareholder wealth increases by \$1000 in years after bankruptcy or restructuring, outside replacement CEOs realize an average \$49.10 increase in their personal wealth (corresponding wealth increases for inside replacement and original incumbent CEOs are \$22.00 and \$59.30, respectively). In general these numbers greatly exceed those reported by similar studies that examine CEO compensation in solvent firms. For example, Jensen and Murphy (1990a) find that CEO wealth typically increases by only \$2.67 (per \$1000 increase in shareholder wealth) for a sample of 2,213 CEOs listed in *Forbes'* Executive Compensation Surveys from 1974 to 1986.³³

³² These implied slope coefficients are obtained by adding the coefficients of the appropriate variables from the second regression in Table VIII. For instance, the 0.0154 slope coefficient for outside replacement CEOs in the "during" subperiod equals the sum of 0.0263 plus -0.0007 plus -0.0102 .

³³ We derive the \$2.67 figure by summing the estimated slope coefficients reported in Tables 1, 2, and 3 of Jensen and Murphy (1990a) that correspond most closely to our own definition of CEO wealth changes (i.e., the sum of changes in cash compensation and changes in the value of stock and stock options). Jensen and Murphy also estimate the wealth implications of CEO dismissals due to poor stock performance. However, their upper bound estimate of the total CEO wealth change per \$1,000 change in shareholder wealth is still only \$3.25, with (median) inside stock ownership accounting for \$2.50 of the total change.

^a Observations include all changes in CEO compensation between consecutive fiscal years that fall within six years on either side of when firms file for bankruptcy or start to restructure their debt. For reasons explained in the text, in all regressions the intercept term has been suppressed. The annual change in the value of CEO stock options equals the number of shares issuable upon exercise of all options held at the beginning of the period $\times (0.6) \times$ the corresponding change in the stock price since the previous fiscal year-end. The annual change in the value of the CEO's inside stockholdings equals $\Delta(\text{shareholder wealth}) \times$ the fraction of outstanding common stock held by the CEO at the beginning of the fiscal year. Stock prices and number of shares outstanding are obtained from Standard and Poor's *Stock Owner's Guide*. All stock prices are adjusted for splits and dividends, and have been converted into constant 1989 dollars using the Consumer Price Index. "Outside replacements" are CEOs who have been affiliated with their firms for less than three years when they first become CEO during the sample period, while "inside replacements" have been affiliated with their firms for more than three years. "Original incumbents" are the original CEOs at the beginning of the sample period.

^b Significantly different from zero at the 1 percent level.

^c Significantly different from zero at the 5 percent level.

^d Significantly different from zero at the 10 percent level.

One possible reason why we obtain higher slope coefficients is that Jensen and Murphy analyze much larger firms (in real terms, the median market value of shareholders' equity in their sample is about six times as large as the median book value of *assets* for our firms). As a result, percentage CEO stock ownership tends to be significantly higher in our firms (sample median CEO ownership equals 1.5%, compared to 0.16% in Jensen and Murphy's sample).

However, our conclusions are qualitatively unchanged when we control for firm size. For a subset of smaller firms examined by Jensen and Murphy (1988 annual sales of less than \$750 million), the median CEO experiences a \$16.96 increase in his or her personal wealth per \$1000 increase in shareholder wealth (based on firm-specific data reported in Jensen and Murphy (1990c)). These firms are of roughly the same size as our firms, which report mean and median annual sales of \$862 million and \$205 million, respectively, in the year prior to bankruptcy or restructuring (see Table I). We also obtain significantly higher slope coefficients than Jensen and Murphy when we reestimate our regressions for a reduced sample that excludes CEOs who own relatively large amounts (greater than 1%) of their firms' stock. Finally, our estimated regression coefficients are qualitatively unchanged when we control for within-sample variation in firm size by including the interactive term $SIZE \cdot \Delta(\text{shareholder wealth})$, where $SIZE$ is variously defined as the book value of total liabilities, the book value of total assets, and the natural logarithms of both variables.

The above analysis suggests that the high sensitivity of CEO wealth to shareholder wealth in financially distressed firms is not simply an artifact of the small size of these firms (compared to solvent firms). Other explanations for our findings include the possibility that financial distress creates an organizational "crisis" within the firm that results in the interests (wealth) of managers and owners becoming more closely aligned (Jensen (1989)). As well, upon regaining their financial health, firms may reward managers for any past financial sacrifices that were made during financial distress (see footnote 26). This last possibility is consistent with our finding of significantly higher slope coefficients in the period *after* bankruptcy or restructuring.

B. Sensitivity of CEO Cash Compensation and Wealth to Earnings Performance

The large number of firms in our sample that both reduce their CEOs' salary and bonus and report annual losses suggests that CEO cash compensation may be systematically (positively) related to firms' earning performance. We test for this relation in Panel B of Table VIII. Regressions are specified as in Panel A, except $\Delta(\text{shareholder wealth})$ is replaced by $\Delta(\text{net income})$, defined as the annual dollar change in reported net income before extraordinary items (in constant 1989 dollars). Our conclusions are qualitatively unchanged when we use alternative measures of earnings performance,

including the change in annual earnings before interest and taxes (EBIT), and the annual percentage change in the rate of return on assets (EBIT divided by the book value of assets at the beginning of the year). Estimated coefficients are also largely unchanged when we include a separate “loss dummy” variable that equals 1 in years that firms report negative net income (before extraordinary items), and 0 otherwise, on the grounds that large increases in earnings may not imply favorable performance if earnings are still negative after the change (DeAngelo *et al.* (1992b)). Finally, results are robust to including one-year lagged earnings performance in the regressions.

The first regression in Panel B indicates that CEO cash compensation and net income are unrelated except in the last subperiod (after bankruptcy or restructuring), when the relation is positive and significant for all three types of CEOs. This last finding is consistent with evidence that CEO cash compensation and earnings performance are significantly (positively) correlated in *solvent* firms (Lambert and Larcker (1987), Jensen and Murphy (1990a), Sloan (1993)). The second regression in Panel B, however, indicates that earnings performance in our sample is positively related to CEO total wealth only for original incumbent CEOs; the estimated relation for both kinds of replacement CEOs is generally either insignificant or negative.

The contrast between results in Panels A and B suggests that earnings and stock returns convey different information about managers' performance in our sample.³⁴ However, the relation between CEO wealth and performance is arguably smaller in *economic* terms when performance is measured by changes in net income. For example, the *largest* (positive or negative) slope coefficient in Panel B is 0.0963, representing the relation between incumbent CEOs' total wealth and net income in the first subperiod (before bankruptcy or restructuring). This coefficient value implies that CEO wealth rises on average by \$96.30 for each \$1000 increase in net income in these CEO-years. Assuming that the market value of common stock is the present discounted value of earnings and that earnings follow a random walk, a \$1000 increase in net income in turn implies a \$20,000 increase in shareholder wealth (assuming a real discount rate of 5%). In other words, CEO wealth increases by only \$4.82 per \$1000 increase in shareholder wealth for this subsample on average; for the rest of the sample the implied change in CEO wealth is considerably smaller.³⁵

³⁴ Although $\Delta(\text{net income})$ and $\Delta(\text{shareholder wealth})$ are positively correlated over the event period, the simple pairwise correlation between these variables is only 0.17 (p -value less than 0.01); moreover, the two performance measures are uncorrelated in the last subperiod (after bankruptcy or restructuring). Of course the true relation between these variables could still be significant but nonlinear.

³⁵ Jensen and Murphy (1990a) perform a similar analysis for their sample of solvent firms, but find that earnings and stock price performance have approximately the same economic impact on CEO wealth.

Collectively, the evidence in Table VIII therefore suggests that the sensitivity of CEO wealth to the firm's stock price *increases* after financial distress, while earnings performance explains much less of the observed variation in CEO compensation or wealth.

V. Summary and Conclusions

This paper studies how senior management compensation policy changed in 77 publicly traded firms that filed for bankruptcy or privately restructured their debt to avoid bankruptcy during 1981 to 1987. We find that incumbent senior managers in our sample incur significant personal losses as a result of their firms' financial distress. Almost one-third of the CEOs in our sample are replaced in a given year around default, and those who remain often take substantial cuts in their salary and bonus. Newly appointed CEOs with ties to previous management are paid *35% less* (at the median) than the outgoing CEO. In striking contrast, the median CEO hired from outside the firm earns *36% more* than his or her predecessor. Outside replacement CEOs, who represent 60% of all new CEO hires, also typically receive large grants of stock options as part of their compensation.

Our evidence suggests that compensation policy is often an important part of firms' overall strategy for dealing with financial distress, through provisions that change managers' incentives or facilitate negotiations with creditors. For example, almost a third of our firms lower the exercise price of outstanding executive stock options which have fallen out of the money. Sometimes senior managers' compensation is tied to the successful resolution of the firm's bankruptcy or debt restructuring, or based on the value of payoffs to *creditors*.

REFERENCES

- Aghion, Philippe, Oliver Hart, and John Moore, 1992, The economics of bankruptcy reform, Unpublished paper, European Bank for Reconstruction and Development, London, Massachusetts Institute of Technology, Cambridge, Mass., and London School of Economics, London.
- Altman, Edward, 1986, Bankruptcy and reorganization, in Edward Altman, ed.: *Handbook of Corporate Finance* (John Wiley & Sons, New York).
- and Scott Nammacher, 1987, *Investing in Junk Bonds: Inside the High Yield Debt Market* (John Wiley & Sons, New York).
- Baldwin, Carliss, and Scott Mason, 1983, The resolution of claims in financial distress: The case of Massey Ferguson, *Journal of Finance* 38, 505–516.
- Bradley, Michael, and Michael Rosenzweig, 1992, The untenable case for Chapter 11, *Yale Law Review* 101, 1043–1089.
- The Conference Board, (various years), *Top Executive Compensation* (New York).
- DeAngelo, Harry, and Linda DeAngelo, 1991, Union negotiations and corporate policy: A study of labor “givebacks” in the domestic steel industry during the 1980s, *Journal of Financial Economics* 30, 3–44.

- and Douglas Skinner, 1992a, An empirical investigation of the relation between accounting choice and dividend policy in troubled companies, *Journal of Accounting and Economics*, Forthcoming.
- , 1992b, Dividends and losses, *Journal of Finance* 47, 1837–1863.
- Dumaine, Brian, 1990, The new turnaround champs, *Fortune*, July 16, 36–44.
- Furtado, Eugene, and Michael Rozeff, 1987, The wealth effects of company initiated management changes, *Journal of Financial Economics* 18, 147–160.
- Gilson, Stuart, 1989, Financial distress and management turnover, *Journal of Financial Economics* 25, 241–262.
- , 1990, Bankruptcy, boards, banks, and blockholders, *Journal of Financial Economics* 26, 355–387.
- , Kose John, and Larry Lang, 1990, Troubled debt restructurings: An empirical study of private reorganization of firms in default, *Journal of Financial Economics* 26, 315–353.
- Gosnell, Thomas, Arthur Keown, and John Pinkerton, 1992, Bankruptcy and insider trading: Differences between exchange-listed and OTC firms, *Journal of Finance* 47, 349–362.
- Hamer, John, 1985, *Troubled debt restructuring* (UMI Research Press, Ann Arbor, Mich.).
- Healy, Paul, 1985, The effect of bonus schemes on accounting decisions, *Journal of Accounting and Economics* 7, 85–107.
- Jensen, Michael, 1989, Active investors, LBOs, and the privatization of bankruptcy, *Journal of Applied Corporate Finance* 2, 235–244.
- , 1991, Corporate control and the politics of finance, *Journal of Applied Corporate Finance* 4, 13–33.
- and William Meckling, 1976, Theory of the firm: Managerial behavior, agency costs and ownership structure, *Journal of Financial Economics* 3, 305–360.
- Jensen, Michael, and Kevin Murphy, 1990a, Performance pay and top-management incentives, *Journal of Political Economy* 98, 225–264.
- , 1990b, CEO incentives—It's not how much you pay, but how, *Harvard Business Review* 68, 138–153.
- , 1990c, A new survey of executive compensation: Full survey and technical appendix, Unpublished paper, Harvard Business School, Boston, Mass.
- Kallen, Laurence, 1991, *Corporate Welfare* (Carol Publishing Group, New York).
- Kole, Stacey, 1992, An investigation of the bundling of compensation plans, Unpublished paper, University of Rochester, Rochester, N.Y.
- Lambert, Richard, and David Larcker, 1987, An analysis of the use of accounting and market measures of performance in executive compensation contracts, *Journal of Accounting Research* 25, 85–129.
- Loderer, Claudio, and Dennis Sheehan, 1989, Corporate bankruptcy and managers' self-serving behavior, *Journal of Finance* 44, 1059–1075.
- Los Angeles Times*, 1991, Another nice option for executives, May 27, D6.
- Murphy, Kevin, 1985, Corporate performance and managerial remuneration, *Journal of Accounting and Economics* 7, 11–42.
- New York Times*, 1983, Masters of the corporate turnaround, July 31, F1.
- Scholes, Myron, 1991, Stock and compensation, *Journal of Finance* 46, 803–823.
- Sloan, Richard, 1993, Accounting earnings and top executive compensation, *Journal of Accounting and Economics*, Forthcoming.
- Smith, Clifford, and Ross Watts, 1982, Incentive and tax effects of executive compensation plans, *Australian Journal of Management* 7, 139–157.
- Stein, Sol, 1989, *A Feast for Lawyers* (M. Evans and Company, Inc., New York).
- Sweeney, Amy, 1991, The impact of debt-covenant violations on accounting choices, Unpublished dissertation, University of Rochester, Rochester, N.Y.
- Wall Street Journal*, 1990a, Labor letter ("Keeping their attention"), March 13, A1.
- , 1990b, Greyhound Lines files revamp, giving unsecured creditors notes, 95% stake, November 20, A11.

- , 1990c, Western Union wins tentative accord with bondholders in restructuring debt, November 30, A5.
- , 1991a, Judge affirms LTV's compensation plan, reducing chief's pay, January 18, C10.
- , 1991b, Drexel slashes executive-pay proposal, April 23, B12.
- , 1991c, Pan Am must pay two new executives \$1.1 million severance, December 23, A5.
- , 1992, Court rejects plan by Zale to hire a chief executive, August 26, B6.
- Warner, Jerold, Ross Watts, and Karen Wruck, 1988, Stock prices and top management changes, *Journal of Financial Economics* 20, 461–492.
- Weisbach, Michael, 1988, Outside directors and CEO turnover, *Journal of Financial Economics* 20, 431–460.