

**MANAGERIAL COMPENSATION
AND THE THREAT OF TAKEOVER**

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Managerial Compensation and the Threat of Takeover

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Managerial Compensation and the Threat of Takeover

Abstract

The threat of takeover acts to discipline managers, but it also makes shareholders' assurances to managers less reliable and so interferes with contracting between them. These two effects have opposing implications about the level of executive compensation: the disciplinary effect implies a reduction in compensation; the contracting effect implies an increase. Which effect dominates is an empirical issue. We examine the relation between managerial compensation and the industry-wide threat of takeover to address this issue. Using compensation data for the CEOs of over 500 firms and after controlling for other determinants of executive compensation found in prior studies, we find a positive effect of the threat of takeover, indicating that the contracting effect dominates. Moreover, this effect occurs only in firms that do not provide CEOs with compensation assurance (such as a golden parachute). The size of the effect is economically significant. For CEOs without golden parachutes, the most popular compensation assurance provision, a 10% increase in the annual probability of takeover from 4.6% to 5.06% results in \$11,200 more in the typical CEO's salary and bonus and \$15,000 more in total compensation. We also find a direct positive effect of compensation assurance provisions on CEO compensation. These results do not seem to be driven by industry effects and are robust to alternative specifications. Together, they provide evidence on an important way in which the market for corporate control affects internal contracting and add to the growing literature on the determinants of the level of executive compensation.

Managerial Compensation and the Threat of Takeover

1. Introduction

The threat of takeover is a two-edged sword for the shareholders of a firm. As argued by Manne (1965) and Jensen and Ruback (1983), greater activity in the market for corporate control provides more incentive for managers to maximize firm value. That is, the threat of takeover reduces the agency problem between managers and shareholders. But it also creates a problem. As suggested by Knoeber (1986) and Shleifer and Summers (1988), a more active market for corporate control interferes with internal contracting by making shareholder assurances to managers less reliable. An important result is that the threat of takeover makes managers less willing to invest in firm-specific human capital.

The two edges of the sword have different implications about managerial compensation. The discipline imposed on managers by the threat of takeover reduces their ability to substitute their own interest for that of the shareholders. One obvious issue on which these interests diverge is managerial compensation. Managers desire to be paid more; shareholders desire to pay less. Excess compensation, like excess perquisite consumption, should be less the stronger is the discipline from the market for corporate control. The greater the threat of takeover, then, the lower will be managerial compensation. Conversely, reduced reliability of shareholder assurances caused by the threat of takeover makes a manager's investment in firm-specific human capital riskier.¹ To induce such investment, shareholders must make the investment more rewarding. That is, they must pay

¹Martin and McConnell (1991) find that chief executive officers (CEOs) of approximately 60% of target firms lose their jobs over a three year period around successful tender-offers. Agrawal and Walkling (1994) find a similar turnover rate for target CEOs around takeover attempts (whether successful or not) by merger or tender-offer. Moreover, they find that these executives fail to find new senior executive positions in public companies in the subsequent three years. These findings suggest that a large part of a typical CEO's human capital may be firm-specific and that CEOs have reason to fear losing this human capital in the event of a takeover bid.

the manager more. The greater the threat of takeover, then, the higher will be managerial compensation.

To test these implications, we use compensation data for the CEOs of over 500 firms. We first reproduce, using our firm level data, the empirical relation between managerial compensation and investment opportunities, firm size, accounting return, and regulation found by Smith and Watts (1992) at the industry level. We then include a variable measuring the industry-wide threat of takeover facing a firm, and find a positive relation between this threat of takeover and managerial compensation. This suggests that the effect from interference with internal contracting dominates. To analyze this issue further, we consider three contractual provisions that may insulate managers from the industry-wide threat of takeover. These are explicit employment contracts, golden parachutes, and compensation plans with other (not golden parachute) change of control provisions. For firms with each of these contractual provisions, we find that the positive relation between the industry-wide threat of takeover and CEO compensation disappears; for firms without these provisions, the relation strengthens. This is additional evidence consistent with dominance of the contractual interference effect. Some related time series evidence offers more support. Our results are robust to the inclusion of a measure of firm diversification and those managerial characteristics which Rose and Shepard (1994) find to affect CEO compensation, alternative measures of the industry-wide threat of takeover, the presence of various anti-takeover devices, and industry effects.

The remainder of the paper is organized as follows. Section 2 analyzes the effects of the threat of takeover on executive compensation and how the presence of compensation assurance provisions affects this relation. Section 3 outlines our empirical approach. Section 4 details the sample selection procedure and describes the data. Section 5 presents our basic empirical results. Section 6 provides several checks for the robustness of our main results. Section 7 empirically examines two alternative explanations of these results. Section 8 summarizes and concludes the paper.

2. Effects of the Threat of Takeover

The threat of takeover has two effects on the agency relationship between managers and shareholders. First, because it imposes discipline on managers, it reduces the agency problem between the manager and shareholders. We refer to this as the disciplinary effect of the threat of takeover. Second, because it makes shareholder assurances less reliable, it interferes with contracting between the manager and shareholders. We refer to this as the contracting effect of the threat of takeover. One important example of the latter is managerial investment in firm-specific human capital (Shleifer and Summers, 1988). Since the threat of takeover reduces the reliability of shareholder assurances, managerial investments in firm-specific human capital are riskier. Similarly, less reliable assurances from shareholders make deferred compensation arrangements riskier for the manager (Knoeber, 1986).² The contracting and disciplinary effects of the threat of takeover have distinct implications for the level of managerial compensation. Additional implications that may distinguish between the disciplinary and contracting effects arise when contractual provisions which assure managerial compensation in the event of a takeover, such as golden parachutes, are considered.

2.1. *Implications of the Contracting Effect*

Where the threat of takeover is greater, shareholder assurances are less reliable. This is because it is easier for new owners to behave opportunistically toward existing managers than it was for the previous owners. As a consequence, managers will require higher compensation to induce them to invest in firm-specific human capital (or agree to deferred compensation arrangements). The contracting effect, then, implies a positive relation between the threat of takeover and managerial

²Eaton and Rosen (1983), Lambert (1983) and Knoeber (1986) discuss the advantages of deferred compensation contracts for executives. Knoeber further emphasizes that the threat of takeover discourages the use of contracts that implicitly defer compensation.

compensation. But this relation may be affected by the existence of contractual arrangements, like golden parachutes. A golden parachute provides assurance to a manager that investments in firm-specific human capital will be rewarded (or deferred compensation will be paid) and so makes shareholders' promises reliable (see Knoeber, 1986 and Jensen, 1988).³ The positive relation between the threat of takeover and managerial compensation caused by unreliable shareholder assurances, then, should disappear (or become weaker) where golden parachutes or similar compensation arrangements exist. Examples of such arrangements besides golden parachutes are explicit employment contracts which are amenable to court enforcement and early vesting of stock options triggered by a change in control. We refer to such arrangements as compensation assurance provisions. The contracting effect also suggests a direct relation between the existence of compensation assurance provisions and managerial compensation. Compensation assurance provisions facilitate investment in firm-specific human capital. This greater investment makes managers more productive and so results in greater compensation. As a result, managerial compensation should be greater where compensation assurance provisions exist.

³To assure managers of their reliability, shareholders would like the size of the golden parachute payment to be sufficient to compensate a manager for the loss of his firm-specific human capital and the present value of any implicitly deferred compensation following a takeover. A very large payment would accomplish this but might also provoke unreliability on the part of the manager. That is, the manager might now induce a takeover to 'earn' the golden parachute payment. If the intent of a golden parachute is to assure managers of shareholder reliability, then the size of the payment should just equal the likely loss to a manager from a takeover (see also Jensen, 1988, p.40). In our empirical analysis, we presume this to be the case.

2.2. Implications of the Disciplinary Effect

Where the threat of takeover is greater, managers will be less able to increase their compensation at shareholder expense (see Brickley and James, 1987).⁴ As a consequence, managerial compensation will be lower. The disciplinary effect, then, implies a negative relation between the threat of takeover and managerial compensation. Once again, this relation may be affected by the existence of a golden parachute or other compensation assurance provision. But here, there are two opposing forces. Because compensation assurance provisions make a takeover less costly to a manager, the threat of takeover provides less discipline. The negative relation between the threat of takeover and managerial compensation should weaken where compensation assurance provisions exist. However, if such assurances are more desirable to managers when the threat of takeover is greater, managers also will be willing to accept larger reductions in compensation in exchange for such assurances as the threat of takeover rises. This suggests a stronger negative relation between the threat of takeover and managerial compensation in the presence of compensation assurance provisions than otherwise. In sum, the presence of compensation assurance provisions has no clear implication for the negative relation between the threat of takeover and managerial compensation implied by the disciplinary effect.

Similarly, the disciplinary effect has no clear implication for the relation between compensation assurance provisions and managerial compensation. Since they are desirable, managers will be willing to sacrifice compensation to acquire golden parachutes or other compensation assurances. Managerial compensation should be less where compensation assurance provisions exist. But managers less subject to discipline (from shareholders or the market for corporate control) will

⁴While particularly egregious overcompensation might motivate a takeover, fear of inducing a takeover is not the primary source of the disciplinary effect on managerial compensation. Rather, where takeovers are more likely, for whatever reason, managers are also more likely to face the discipline associated with new ownership.

have greater opportunities to advance their interests at the expense of shareholders. Since both greater pay and compensation assurances are desirable, we might see more of both where agency problems are more severe and less of both where agency problems are less severe. This suggests a positive relation between managerial pay and the presence of compensation assurance provisions.

2.3. Summary of Empirical Implications

The contracting effect of the threat of takeover offers three unambiguous predictions that we can test: (1) Managerial compensation should be positively related to the threat of takeover. (2) This positive relation should arise only where compensation assurance provisions, such as golden parachutes, do not exist. In the presence of compensation assurance provisions, the threat of takeover should have no effect on managerial compensation. (3) Compensation assurance provisions and managerial compensation should be positively related.

The disciplinary effect provides one unambiguous prediction. Managerial compensation should be negatively related to the threat of takeover. Both the effect of the presence of compensation assurance provisions on this relation and the implication of the disciplinary effect on the relation between compensation assurance provisions and managerial compensation are ambiguous.

3. Empirical Approach

To test the implications of the disciplinary and contracting effects of the threat of takeover on managerial compensation, we employ an industry-wide measure of the threat of takeover. This accords with the evidence that takeover activity has an important industry component (Palepu, 1986; Mitchell and Mulherin, 1996) and allows us to treat the threat of takeover as exogenous at the level of the firm. We then look across firms at the determinants of CEO compensation. Although no other study has considered the effect of the threat of takeover on managerial compensation, several

recent empirical studies have sought to explain the variation across firms in the level of managerial compensation. We adopt and extend their framework.

Smith and Watts (1992), using industry level data, find that the log of median CEO salary in an industry increases with growth opportunities (measured as the market value of a firm/book value of its total assets), firm size (log sales), and firm performance (accounting return), and is smaller for regulated industries (insurance, banking, and utilities).⁵

Gaver and Gaver (1993, 1995) find similar results using firm level data. In the earlier paper, they find that the average cash compensation for a firm's five highest paid executives increases with growth opportunities (measured by an index), firm size (log of assets), and firm performance (accounting income). The later paper uses the same measures to explain total compensation of CEOs and finds similar results.

Rose and Shepard (1994) find that larger firms (log sales), better performing firms (various performance measures), and more diversified firms all pay CEOs more (log of CEO salary plus bonus; log of total compensation). They also examine several characteristics of the CEO, including whether or not he founded the firm, whether or not he was hired as CEO from outside the firm, age at appointment as CEO, and tenure as CEO. While statistical significance is much lower for these characteristics (except for the outsider variable, the coefficient estimates are statistically insignificant), founders receive lower compensation while outsiders, older, and longer serving CEOs receive higher compensation.

We frame our tests using these prior empirical findings. To begin, we use firm level data to estimate a cross-sectional regression patterned after that of Smith and Watts. Specifically, we

⁵Murphy (1985) and Coughlan and Schmidt (1985) find, in samples of unregulated firms, that executive compensation is higher in larger firms and firms with better stock price performance. Agrawal, Makhija and Mandelker (1991) find similar results for regulated firms.

estimate the following equation:⁶

$$\log \text{ Compensation} = f(\text{Growth Opportunities, log Sales, Regulation, Accounting Return}).$$

Our intent is to re-examine the relations found by Smith and Watts at the industry level but with firm level data, and so we expect positive coefficients for the Growth, Sales, and Accounting Return variables, and a negative coefficient for the Regulation dummy. We then add an industry level measure of the threat of takeover to our set of explanatory variables. The coefficient on this takeover threat variable tests for the dominance of the disciplinary vs. the contracting effect on managerial compensation. A negative sign would indicate that the disciplinary effect dominates; a positive sign would indicate that the contracting effect dominates.

Next, we consider three contractual provisions that could assure compensation in the event of a takeover. These are explicit compensation contracts with the CEO, golden parachutes, and other compensation plans tied to a change of control (such as early vesting of stock options or acceleration of benefits under performance plans). First, we examine the pattern of use of these provisions. Then, we include a binary variable indicating the presence of a compensation assurance provision in the compensation regression. In addition, we now include the industry-wide takeover threat variable separately for firms with the compensation assurance provision and for firms without the provision. If the contracting effect of the threat of takeover dominates, we predict that the compensation assurance variable will have a positive coefficient and that the takeover threat variable will now have a positive coefficient only for those firms without the provision. If the disciplinary effect of the threat of takeover dominates, we have no prediction as to the sign of the coefficient on the compensation assurance provision nor the effect of the provision on the relation between managerial compensation and the takeover threat variable.

⁶Our estimations employ both salary plus bonus and total compensation as measures of CEO compensation.

We extend our main results by considering some related time series evidence. We also examine the robustness of these results by including a measure of firm diversification along with the characteristics of CEOs that Rose and Shepard use to explain CEO compensation. Further checks for robustness include introducing alternative measures of the threat of takeover and including variables indicating the presence of various antitakeover devices. Finally, we evaluate empirically two alternative explanations of our results.

4. Sample and Data

Our sample consists of the set of 'Forbes 800' firms. These are firms that appear in any of the four lists, made by Forbes magazine, of the 500 largest U.S. firms as measured by sales, total assets, market value of equity or profits. Together, the four lists include about 800 firms. For each firm, we obtain the data on the CEO's annual salary plus bonus (SALB) and his annual total compensation (TCOMP) from Forbes magazine's annual survey of top executive compensation for 1987. TCOMP equals SALB plus payments made under long-term compensation plans, restricted stock awards vested or released from restrictions during the year, thrift plan contributions, and other benefits. Ideally, it should also include the *ex-ante* value of stock options granted during the year. Unfortunately, this data is not reported in Forbes. However, evidence in Yermack (1995) suggests that the median value of stock options granted is under 10% of a CEO's total compensation.⁷ Therefore, its omission should not cause a significant bias.⁸ We also obtain from Forbes the

⁷His table 3 shows that the median value of this variable is 9.7% during 1984-91, with a mean of 42.1%. While he does not report the median value for 1987, the year of our sample, this value may be even lower since his Figure 1 shows that the mean value of this ratio for 1987 is about 30%.

⁸Forbes does report the realized value of stock options. Since realizations are infrequent and large, their inclusion introduces noise into the total compensation measure. Despite this, all the subsequent results are similar when we add this value to our measure of total compensation. Hence, we do not report this latter measure in the tables.

executive's age at the time of appointment as the CEO (AGEAPPT), number of years in the CEO position (TENURE), whether he founded the company (FOUNDER = 1 if he did; 0 otherwise), and whether he was appointed to the CEO position from outside the company (OUTSIDER).⁹

The following data are obtained from COMPUSTAT annual files (Industrial, Industrial Research, OTC and OTC Research): total assets (ASSET), net sales (SALES), the measure of firm growth opportunities (GROWTH) and cashflow return (CR). GROWTH is defined as the inverse of the A/V measure in Smith and Watts (1992):

$$\text{GROWTH} = \text{V}/\text{ASSET}$$

where:

$$\text{V} = \text{EQUITY} + \text{LTD} + \text{STD} + \text{PFD} + \text{CV},$$

EQUITY = Market value of equity,

LTD = Book value of long-term debt,

STD = Book value of short-term debt,

PFD = Preferred stock at liquidating value,

CV = Book value of convertible securities,

ASSET = Book value of total assets.

Cashflow return (CR) is defined as in Healy, Palepu and Ruback (1992):

$$\text{CR} = \text{OCF}/\text{V}$$

where:

$$\text{OCF} = \text{Operating cashflow} = \text{Sales} - \text{Cost of goods sold} - \text{Selling and administrative expenses} + \text{Depreciation}.$$

Healy, Palepu and Ruback argue that the CR measure is superior to traditional measures of

⁹OUTSIDER = 1 if the CEO was not the company's founder and had been with the company less than four years at the time of appointment as CEO; it is zero otherwise. This definition follows Rose and Shepard (1994).

accounting performance because it is based on cashflows rather than accounting profits and because it uses an estimate of the market value (rather than book value) of assets.

We estimate the takeover threat for a firm (TTHREAT) as the relative frequency of takeovers of NYSE firms in its 2-digit SIC industry over the seven year period preceding December 31, 1987. This procedure is based on Palepu's (1986) evidence that the industry of a firm is an important determinant of its probability of acquisition. The exact procedure we use is as follows. We obtain a list of all firms that were listed on NYSE as of December 31, 1980 from CRSP files. From these firms, we next identify all firms that were delisted over the next seven years due to a merger or reorganization. We then compute an industry-specific probability of takeover over this period using the 2-digit SIC code.¹⁰

We define a firm to be regulated ($REG = 1$), if its primary SIC code indicates that it is a railroad, public utility, banking, finance, or insurance firm (two-digit SICs 40, 48, 49, 60, 61, or 63); otherwise, $REG = 0$.

Next, we obtain data on the CEO's employment contract from the 1989 Directory of Corporate Takeover Defenses published by the Investor Responsibility Research Center (IRRC). We define $GP = 1$, if the CEO had a golden parachute as of the end of 1987; otherwise, $GP = 0$. A golden parachute provides certain cash and other benefits if the executive is fired, demoted or resigns within a specified time period following a change in control of the firm. We define $CCPLAN = 1$ if the CEO's employment plan contains other (non-golden parachute) change in control provisions; it equals zero otherwise. These plans provide for benefits such as early vesting of stock options or acceleration of performance plan benefits. We also define $EMP = 1$ if the CEO has an explicit

¹⁰We do not use 3- or 4-digit SIC industry codes to avoid forcing the probability of takeover to equal zero due to the small number of firms in some industries using these narrower industry definitions. We chose the NYSE firms for this purpose because they are large firms, similar to the Forbes 800 population.

employment contract; it equals zero otherwise.

Finally, we define a measure of firm diversification (DIVERSE) as the number of different lines of business (at the 3-digit SIC industry level) that the firm operates. This data is obtained from Standard and Poor's Register of Corporations, Directors, and Executives.¹¹ We use this simple measure of diversification (which is not the principal measure used by Rose and Shepard but is very similar to their NUMSEG measure) because the effect of diversification is not the primary focus of this paper.

We are able to obtain this data for about 542 firms. Table 1 presents summary statistics of each variable. The average salary plus bonus of the CEOs in our sample is \$812 thousand (median = \$688 thousand) and their average total compensation is \$918 thousand (median = \$736 thousand). About 48% of the CEOs had golden parachutes. About 38% had other change in control provisions in their contracts, and 11% had explicit employment contracts. The average executive was appointed to the CEO position at age 48 and had held that position for 8.8 years. About 17% of the CEOs had been appointed from outside the firm, and about 9% were founders. The average firm in our sample had a growth opportunities measure of 1.17 (median = .90). The median firm had sales of about \$2.2 billion, total assets of \$2.6 billion, cashflow return of 15%, and operated in three lines of business. About 25% of the sample firms were regulated. The probability of takeover in the industry of the median firm was 27% over the 7-year period or about 4.4% per year.

Table 2 presents the correlations among the variables. The two compensation variables (log of the CEO's salary plus bonus (LSALB) and the log of total compensation (LTCOMP)) are positively related to each other and to the log of sales (LSALES), cashflow return (CR), takeover threat (TTHREAT), the presence of golden parachutes (GP), other change in control provisions (CCPLAN) and explicit employment contracts (EMP); each is also negatively related to regulation

¹¹The S&P Register reports up to 20 different 4-digit SIC industry codes for a firm.

(REG). In addition, the threat of takeover (TTHREAT) is negatively related to regulation (REG).

5. Empirical Results

5.1. *The Threat of Takeover and Managerial Compensation*

Our first task is to use our firm level data to re-examine the empirical relation between managerial compensation and growth opportunities, firm size, accounting return, and regulation that Smith and Watts (1992) document using industry level data. To do so, we use ordinary least squares, OLS, to estimate

$$(1) \text{LSALB} = f(\text{GROWTH}, \text{LSALES}, \text{CR}, \text{REG}).$$

To mimic Smith and Watts' findings, the coefficients on GROWTH, LSALES, and CR should be positive and the coefficient on REG should be negative. The results of our estimation are displayed in the first column of Table 3. The similarity between these results and those of Smith and Watts is striking. In each case, we find coefficients with the same sign and strikingly similar magnitude as those in Smith and Watts. Moreover, the statistical significance of these coefficients is greater using our firm level data than that found by Smith and Watts using industry level data. We also estimated (1) using our measure of total compensation, LTCOMP, as the dependent variable. Column 3 shows that these results are very similar.

Our next task is to use this framework to test for the effect that the threat of takeover has on managerial compensation. To do so, we add the industry-wide threat of takeover as an additional explanatory variable

$$(2) \text{LSALB} = f(\text{GROWTH}, \text{LSALES}, \text{CR}, \text{REG}, \text{TTHREAT}).$$

If the disciplinary effect of the threat of takeover dominates, the coefficient on TTHREAT will be negative; if the contracting effect dominates, the coefficient on TTHREAT will be positive. We use OLS to estimate equation (2) and report our results in the second column of Table 3.

Results using total compensation are reported in column 4. The threat of takeover is positively and significantly related to managerial compensation, indicating that the contracting effect dominates. The elasticity of a CEO's salary plus bonus with respect to the industry-wide threat of takeover, evaluated at the mean value for the threat of takeover, is .09 (.11 for total compensation). This implies that a 10 percent increase in the industry-wide threat of takeover (from .28 to .31 as we measure it or from .046 to .051 per year) leads to an increase in the CEO's salary plus bonus, evaluated at the mean value of SALB, of \$7,300; the corresponding increase in total compensation is \$10,100.^{12,13}

5.2. *The Effect of Compensation Assurance Provisions*

Shareholders can use several contract provisions to assure managers that promised compensation will be paid despite a takeover. Given our finding in Table 3 that the contracting effect dominates (the industry-wide threat of takeover is positively related to managerial compensation), these compensation assurance provisions may play an important role. To examine this issue, we begin by describing the incidence of the three compensation assurance provisions and their relation to the industry-wide threat of takeover. We then re-estimate the compensation regressions in Table 3 adding a variable indicating the existence of a compensation assurance provision and estimating the effect of the threat of takeover on compensation separately for firms with and without this provision.

¹²This is an estimate of the *net* effect on CEO compensation of the disciplinary and contracting effects of the threat of takeover. Since these two effects oppose one another, our estimate may understate the size of the (dominant) contracting effect alone.

¹³The finding that a greater threat of takeover leads to greater managerial compensation does not imply that an increased threat of takeover is 'bad news' for the shareholders of a firm. While an increased threat of takeover brings with it additional managerial compensation costs, it may also bring better behavior by managers. If this second effect dominates, as is likely, an increased threat of takeover will be 'good news' for shareholders.

The three contractual provisions that can assure managers that promised compensation will be paid despite a takeover are an explicit employment contract, EMP, a golden parachute, GP, and other change in control plans, CCPLAN. In our sample, approximately 10 percent of firms provided explicit employment contracts to CEOs, about 50 percent provided golden parachutes, and about 40 percent provided some other change in control plan. Overall, slightly more than 65 percent of the sample firms provided one or more of these compensation assurance provisions to their CEOs. The correlations in Table 2 suggest that the three contract provisions are related. Golden parachutes and other change in control plans tend to be found together, but neither tends to be found with explicit employment contracts. Further, the correlation of these provisions with the industry-wide threat of takeover is typically positive but weak.

Panel A of Table 4 describes the incidence of these three contract provisions and their union, CONTRACT, for our sample firms divided two ways. The first two columns divide firms based on our industry-wide measure of the threat of takeover, TTHREAT. Column 1 comprises the one-half of our sample with the lowest TTHREAT. Column 2 comprises the one-half of firms with the highest TTHREAT. Where TTHREAT is greater, each of the compensation assurance provisions (and their union) is slightly more likely, but the differences are statistically insignificant. The last two columns divide our sample firms into those firms that were subsequently taken over during the period 1988-94 and those that were not. For the 41 firms that were subsequently taken over, the incidence of each of the compensation assurance provisions was substantially lower. The differences for GP and for CONTRACT have strong statistical significance, and that for CCPLAN is weakly significant.

This negative relation between actual takeovers and compensation assurance provisions is quite interesting. It seems inconsistent with the use of these contract provisions to align the interests of managers and shareholders during a takeover attempt, since these results suggest that takeovers

are more likely where these provisions are absent. It is, however, consistent with both the contracting and the disciplinary effects we describe. Since a firm's likelihood of takeover is largely determined by the firm's own behavior (not just the industry-wide threat of takeover), a firm wishing to induce managerial investment in firm-specific human capital (or delay compensation) may act both to reduce the likelihood of a takeover and provide compensation assurance to managers. Similarly, a firm wishing to take advantage of the discipline imposed by the market for corporate control may both promote takeovers and leave its manager unprotected.

To explore more fully the incidence of compensation assurance provisions, we estimate probit regressions with each provision and their union, CONTRACT, as a dependent variable. In addition to TTHREAT, we include three other likely determinants as independent variables. These are the percentage of a firm's shares held by officers and directors, POD; firm size, LSALES; and the number of years that the CEO has been employed by the company, YCO. Since insider shareholding both makes a successful hostile takeover less likely and provides the CEO with a gain from stock price appreciation when takeovers succeed, it makes compensation assurance less valuable to CEOs. So, we expect POD to be negatively related to the use of compensation assurance provisions. Similarly, to the extent that larger firms are relatively less likely to be taken over, we expect a negative relation between LSALES and the use of compensation assurance provisions. Finally, the length of time that a CEO has been with his company affects how much he has at stake in the event of a takeover. If firm-specific human capital increases with tenure, longer serving CEOs will have more at stake in the event of a takeover. This suggests a positive relation between YCO and the use of compensation assurance provisions. On the other hand, if firm-specific human capital depreciates with tenure, longer tenure implies that the CEO has less at stake in the event of a takeover. This suggests a negative relation between YCO and the use of compensation assurance provisions.

Panel B of Table 4 presents results of the probit estimations. For golden parachutes, the

coefficients on POD and YCO are both negative and statistically significant. The coefficient on THREAT is positive but is statistically insignificant. Including EMP and CCPLAN as variables explaining the use of golden parachutes provides strong evidence of interdependence. As in the simple correlations, golden parachutes are less likely when employment contracts are explicit and more likely when other change of control plans are used. Firm size has a negative effect on the use of golden parachutes and is marginally significant. Results for explicit employment contracts, for other (than golden parachute) change of control plans, and for the union of all three compensation assurance provisions together, CONTRACT, are similar to those for golden parachutes. Only for CONTRACT is the industry-wide threat of takeover a significant (positive) determinant. The weakness of the relation with TTHREAT argues for treating the incidence of compensation assurance provisions as exogenous as we continue our examination of the effect of the threat of takeover on managerial compensation.

Compensation assurance provisions may affect both the level of managerial compensation and the relation between compensation and the industry-wide threat of takeover. To test for such effects, we include the presence of the provision, for example a golden parachute, as an additional variable explaining compensation. We also include the industry-wide threat of takeover separately for firms which do and do not provide their CEO with this compensation assurance provision. For example, for golden parachutes, we estimate

$$(3) \text{LSALB} = f(\text{GROWTH}, \text{LSALES}, \text{CR}, \text{REG}, \text{TTHREAT*GP}, \\ \text{TTHREAT*(1-GP)}, \text{GP}).$$

The finding in Table 3 that the contracting effect dominates (the threat of takeover is positively related to managerial compensation) implies that the coefficient on TTHREAT*(1-GP) will be positive, that on TTHREAT*GP will be non-positive, and that on GP will be positive. The same implications hold for the other two compensation assurance provisions, EMP and CCPLAN, and for

their union, CONTRACT. The OLS estimates of equations like (3), and the corresponding estimates with LTCOMP as the dependent variable are reported in Table 5. Results are consistent with our expectations. In the presence of each of the compensation assurance provisions, the industry-wide threat of takeover has no effect on managerial compensation (for example, the coefficient on TTHREAT*GP is indistinguishable from zero). The relation between the industry-wide threat of takeover and managerial compensation for firms without the compensation assurance provision remains positive and statistically significant (again for example, the coefficient on TTHREAT*(1-GP) is both larger and equally or more statistically significant than that on TTHREAT in column 2 and column 4 of Table 3). And there is a positive and statistically significant relation between the presence of each compensation assurance provision and the level of managerial compensation. The similarity of effects for the several compensation assurance provisions is remarkable. Not only is statistical significance similar but magnitudes of the effects for each of the provisions are very close.

To provide a sense of the size of effects on CEO compensation, consider golden parachutes. The elasticity of SALB with respect to TTHREAT (evaluated at the mean TTHREAT) for the firms without golden parachutes (non-GP firms) is .14. So a 10% increase in the industry-wide threat of takeover from .29 to .32 (i.e., from .048 to .054 per year) yields, on average, a 1.4% increase in salary plus bonus for CEOs of non-GP firms. Evaluated at their mean salary plus bonus of \$797 thousand, this works out to about \$11,200. The corresponding figure where no distinction was made between firms with and without golden parachutes was \$7,300. Similarly, for firms without golden parachutes, a 10% increase in the industry-wide threat of takeover leads to an increase of \$15,000 in total compensation, substantially more than the average of \$10,100 for all firms.

5.3. Time Series Evidence

Both of our main empirical findings are based on cross-sectional data. Two other sources provide some time series evidence. First, an examination of the recent experience of electric and gas utilities provides time series evidence consistent with our first finding that CEO compensation is higher where the industry-wide threat of takeover is greater. McLaughlin and Mehran (1995) describe an increase in hostile takeover activity for electric and gas utilities starting in the late 1980s as regulatory constraints were relaxed. Our cross-sectional evidence suggests that this increase in the industry-wide threat of takeover should be met with greater CEO compensation in the utility industry. Using data from the Conference Board publication, *Top Executive Compensation*, we determined total current compensation for CEOs at the 25th, 50th, and 75th compensation percentile in public utilities and in the manufacturing sector for eleven years during the period 1981-93.¹⁴ We calculated relative compensation for utility CEOs by taking the ratio of utilities compensation to manufacturing compensation. This measure of the relative compensation of utility CEOs rose in the latter 1980s and early 1990s coincident with the increase in the threat of takeover. For CEOs at the 25th percentile, mean (across years) relative compensation at utilities for 1988-1993 exceeds that for 1981-1987 by 6 percentage points (67% vs. 61%), and the difference is statistically significant at $p = .04$. For CEOs at the 50th percentile, mean relative compensation at utilities rises in the latter period by 8 percentage points (from 57% to 65%), and this difference is significant at $p = .01$. For CEOs at the 75th percentile, the increase is 9 percentage points (from 51% to 60%) with a p value less than .001.

The second piece of evidence is contained in a recent paper by Borokhovich, Brunarski, and Parrino (1995), who examine the effect of antitakeover amendments on CEO compensation. The authors examine a sample of 129 firms that adopted a supermajority or a fair price antitakeover

¹⁴Figures for the years 1983 and 1986 are not available from Conference Board.

amendment during the period 1979-87. They find that at the time of adoption, CEOs of such firms received greater excess compensation. If firms that adopt antitakeover amendments faced a greater threat of takeover prior to adoption, this evidence is consistent with our first finding that CEO compensation is higher where the industry-wide threat of takeover is greater. The authors also find that excess compensation rises for CEOs subsequent to the adoption of an antitakeover amendment. If adoption reduces takeover probability, this latter piece of evidence is inconsistent with our first finding.

6. Robustness Checks

6.1. Firm Diversification

To assess the robustness of our findings, we consider several issues. First, we add a measure of firm diversification, DIVERSE, like that which Rose and Shepard found to be positively related to CEO compensation, along with the variables for CEO characteristics that they considered. We do this in two stages. Initially, we estimate a relation like that in Rose and Shepard.

$$(4) \text{LSALB} = f(\text{DIVERSE}, \text{LSALES}, \text{CR}, \text{TENURE}, \text{AGEAPPT}, \text{OUTSIDER}, \\ \text{FOUNDER}, \text{REG}).$$

We include the regulation dummy (with a predicted negative coefficient) because our sample includes regulated firms while that of Rose and Shepard did not. Otherwise, equation (4) mimics that in Rose and Shepard, and so we expect similar results. DIVERSE should have a positive coefficient, as should LSALES, CR, and OUTSIDER. And the coefficients on TENURE, AGEAPPT, and FOUNDER will all likely be insignificantly different from zero. Next, we expand equation (3), which is estimated in column one of Table 5 and is typical of the results reported there, to include the firm diversification and CEO characteristics variables considered by Rose and Shepard.

$$(5) \text{LSALB} = f(\text{GROWTH}, \text{LSALES}, \text{CR}, \text{REG}, \text{TTHREAT*GP}, \text{TTHREAT*(1-GP)}, \\ \text{GP}, \text{DIVERSE}, \text{TENURE}, \text{AGEAPPT}, \text{OUTSIDER}, \text{FOUNDER}).$$

We expect the new variables to have coefficients similar to those in equation (4), and we expect their addition to have little effect on the coefficients of the original variables reported in Table 5.

OLS estimates of equations (4) and (5) are presented in the first and second columns of Table 6. The corresponding estimates using LTCOMP to measure managerial compensation are presented in columns 3 and 4. The first and third columns are very similar to the results in Rose and Shepard. DIVERSE, LSALES, CR, and OUTSIDER all have the expected positive relation to managerial compensation. And TENURE, AGEAPPT, and FOUNDER are all statistically insignificant. The second and fourth columns provide evidence that our earlier results are robust. The new variables (DIVERSE, OUTSIDER, etc.) perform as in columns 1 and 3, and their inclusion has virtually no effect on the relations between the original variables and managerial compensation shown in columns 1 and 5 of Table 5.

6.2. *Measurement of the Threat of Takeover*

Second, we consider two alternative measures of the industry-wide threat of takeover. Recall that TTHREAT for a firm is the relative frequency of takeovers among NYSE firms in the same 2-digit SIC industry as the firm over the seven year period preceding the end of 1987. Our use of this variable implicitly assumes that this measure of the threat of takeover is stable over a fairly long period. This may not be the case. Bursts of takeover activity in an industry may be related to economic shocks, making a measure that depends on activity as much as seven years earlier a poor measure of the present threat of takeover. To address this possibility, we constructed two new TTHREAT measures using the same procedure as before except using differing time periods. The first alternative measures the industry-wide threat of takeover for just the three years preceding the

end of 1987; the second alternative measures this threat for the seven years succeeding 1987. We then re-estimated those regressions in Tables 3 and 5 in which TTHREAT appears using these new TTHREAT variables. The results are similar. Columns 5 and 6 of Table 6 present these results for the model given in equation (3) and reported in column one of Table 5. The only notable difference is the decline in statistical significance of TTHREAT for those firms without golden parachutes when the forward looking measure of TTHREAT is used.

6.3. Antitakeover Defenses

Third, because antitakeover devices may work like golden parachutes to insulate managers from the industry-wide threat of takeover, we also estimated the models shown in Tables 5 and 6 with variables indicating three types of antitakeover devices included. The source for each was the 1989 Directory of Corporate Takeover Defenses. The variable ATCA = 1 if any antitakeover charter amendment was in place at the end of 1987 (classified board, fair price provision, or supermajority provision); ATCA = 0 otherwise. The variable PP = 1 if a poison pill was in place at the end of 1987; PP = 0 if not. The variable DC = 1 if the firm had dual classes of stock; DC = 0 otherwise. Adding these variables does not affect the results reported in Tables 5 and 6. The coefficients on ATCA, PP, and DC are all positive, but none has a statistically significant effect on managerial compensation. Neither does their inclusion alter the effects of the other variables.

6.4. Industry Effects

Finally, we explored our data set to determine if our industry-wide measure of the threat of takeover could be proxying for some other industry characteristic that itself was correlated with managerial compensation. If this were true, the positive relation between managerial compensation

and the threat of takeover that we observe may be spurious. We found only one possibility. Table 7 presents summary statistics on CEOs' salary plus bonus ordered by deciles of the threat of takeover separately for firms with and without golden parachutes, the most popular compensation assurance provision. For firms without golden parachutes, salary plus bonus is markedly smaller for firms facing little threat of takeover (the first two deciles). No other systematic pattern appears in the data. This is also true with total compensation (not shown in the table). The explanation for the low values of managerial compensation for firms facing a small threat of takeover is straight forward and has little to do with the issues raised in this paper. Most of the firms (without golden parachutes) in decile 1 and all of the firms in decile 2 are electric and gas utilities.¹⁵ It is well known that executives in public utilities receive lower compensation than industrial firms (see, e.g., Agrawal, Makhija and Mandelker, 1991). But this fact is not what drives our finding of a positive relation between managerial compensation and the threat of takeover. Since we have included in our regressions a dummy variable for regulated firms (predominantly electric and gas utilities), we have already controlled for this relation. As far as we can determine, our measure of takeover threat does not proxy for some other industry characteristic related to managerial compensation.

7. Alternative Explanations

Our empirical results identify two important findings. The first is that CEO compensation is greater for firms in those industries where the threat of takeover is greater, but that this relation holds only for CEOs not protected by compensation assurance provisions. For CEOs with compensation assurance provisions, there is no relation between the industry-wide threat of takeover

¹⁵In all, we have 77 electric and gas utilities in our sample. Except for this concentration, however, our sample has very broad industry coverage. A total of 56 industries (2-digit SIC classification) are represented. The industries with the next largest number of firms are chemicals with 38 and fabricated metals with 34. No other industry has more than 26 firms.

and managerial compensation. The second finding is that CEOs protected by compensation assurance provisions are paid more. Both of these findings are consistent with the implications of the contracting effect. But they may be consistent with other explanations as well.

7.1. Free Cash Flow Effect

Another explanation for our first finding follows from Jensen's (1986) theory of free cash flow. Firms in industries in which there is substantial cash flow but few investment opportunities face a serious agency problem. This agency problem has two consequences. The first is that managers consume excessive perquisites, including taking excessive compensation. This is a symptom of the agency problem. The second is that the industry becomes a more attractive target for takeovers. This is a result of the agency problem. So, greater free cash flow may lead both to higher managerial compensation and to a greater industry-wide threat of takeover. Together, these two effects imply that managerial compensation and the industry-wide threat of takeover will be positively related. Another explanation of our first empirical finding, then, is that we have omitted the important variable, free cash flow, that is driving both compensation and the threat of takeover.

To evaluate this possibility, we construct a measure of each firm's free cash flow. This measure is:

$$\begin{aligned} \text{Free Cash Flow} = & \text{EBIT} - (\text{Taxes} - \text{Deferred Tax} + \text{Tax Deferred from Previous Year}) \\ & - \text{Interest Expense} - \text{Preferred Dividends} - \text{Common Dividends}, \end{aligned}$$

where EBIT is Earnings before Interest and Taxes. We normalize this measure by dividing it by the market value of the firm's equity. We label this normalized measure of free cash flow FCFLOW.¹⁶ We introduce FCFLOW into our regression explaining managerial compensation in two stages.

¹⁶We also normalized by dividing each firm's free cash flow by its book value of equity. Results using this variable were essentially the same as those described in the text. Lehn and Poulsen (1989) also use these measures of free cash flow.

First, we replace TTHREAT with FCFLOW. Under the free cash flow explanation, we expect the coefficient on FCFLOW to be positive. We, then, include both FCFLOW and TTHREAT in the regressions reported in Tables 3 and 5. The first three columns of Table 8 present typical results. Interestingly, the coefficient on FCFLOW is always negative, but statistically insignificant except in the model in which the golden parachute variable (a compensation assurance provision) is included. The negative sign on FCFLOW is inconsistent with the free cash flow explanation of the relation between the industry-wide threat of takeover and managerial compensation. More strikingly, the coefficients (and statistical significance) on the other variables are unchanged when FCFLOW is added. In particular the empirical relation between the threat of takeover and managerial compensation is unchanged. These results do not support the free cash flow explanation of our first empirical finding.

7.2. Tax Effect

Our second finding, that managers with compensation assurance provisions are paid more, also might have another explanation, at least in part. Firms face a substantial tax penalty if the size of a CEO's golden parachute exceeds three times his annual cash compensation. Where this 'three times' constraint is binding, firms may raise a CEO's cash compensation partly to loosen the constraint (such firms find it cheaper to raise the CEO's pay). The result is a positive relation between the use of golden parachutes and cash compensation, consistent with the positive relation between our GP variable and LSALB (the log of cash compensation).¹⁷ If this tax explanation drives our empirical finding, the positive relation between GP and LSALB should be greatest where the 'three times' constraint is most likely to bind. This is where cash compensation is smallest as

¹⁷The tax consequences hold only for golden parachutes. So, the tax explanation cannot account for our results with explicit employment contracts (EMP) and with other change of control plans (CCPLAN).

a fraction of total compensation.

To examine this possibility, we divide cash compensation (SALB) by our total compensation measure (TCOMP). We label this variable percent cash (PCASH) and include its interaction with the golden parachute variable, PCASH*GP, in compensation regressions. If tax considerations are responsible for the positive relation between the use of golden parachutes and managerial compensation, the coefficient on this interaction variable should be negative. The last column in Table 8 shows that the coefficient of the interaction variable is positive but statistically insignificant. This result offers no support for the tax explanation of our second empirical finding.

8. Conclusion

The threat of takeover exerted by the market for corporate control has two opposing effects on the compensation of managers. Because it disciplines managers, it acts to reduce excess compensation. But it also interferes with internal contracting. For example, it is harder to induce managers to invest in firm-specific human capital because shareholder assurances are less reliable. So shareholders must pay more to induce such desirable investments. Whether the disciplinary effect or the contracting effect dominates is an empirical issue.

We examine the relation between managerial compensation and the industry-wide threat of takeover to resolve this issue. The disciplinary effect implies a negative relation between managerial compensation and the threat of takeover; the contracting effect implies a positive relation. Using compensation data for the CEOs of over 500 firms and after controlling for other determinants of executive compensation found in prior studies, we find a positive effect of the threat of takeover, indicating that the contracting effect dominates. Importantly, this effect only exists for firms without provisions, such as explicit employment contracts and golden parachutes, which assure managerial compensation in the event of a takeover. The magnitude of the contracting effect, net of any

disciplinary effect, is economically significant. A 10% increase in the threat of takeover from 4.6% per year to 5.06% per year results in an increase in a typical CEO's annual salary plus bonus of \$11,200 and an increase in total compensation of \$15,000, provided he does not have a golden parachute, the most common compensation assurance provision.

Two-thirds of the sample firms offer some compensation assurance to CEOs, and half offer golden parachutes. Interestingly, the incidence of these provisions is less among firms that are subsequently taken over. Moreover, we find a direct positive effect of the presence of compensation assurance provisions on CEO compensation. These cross-sectional findings are supported by the time series evidence of a recent increase in CEO compensation coincident with the greater threat of takeover now faced by public utilities. Our results are robust to the effects on managerial compensation of firm diversification, measurement of the threat of takeover, the presence of various antitakeover devices, and industry effects. Together, they provide evidence on an important way in which the market for corporate control affects internal contracting and add to the growing literature on the determinants of the level of executive compensation.

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Table 1

Descriptive Statistics

The sample consists of 542 Forbes 800 firms for 1987.

Variable ¹	Mean	Median	Standard Deviation	First Quartile	Third Quartile	Sample Size
SALB (\$'000)	812	688	823	464	972	542
TCOMP (\$'000)	918	736	943	499	1089	542
SALES (\$ millions)	4441	2152	8549	1175	4282	542
ASSETS (\$ millions)	5606	2603	9630	1150	5680	542
GROWTH	1.17	0.90	0.88	0.73	1.37	542
CR	0.16	0.15	0.10	0.12	0.18	542
REG	0.25	0	0.44	0	1	542
TTHREAT	0.28	0.27	0.14	0.21	0.34	541
GP	0.48	0	0.50	0	1	523
EMP	0.11	0	0.31	0	0	520
CCPLAN	0.38	0	0.48	0	1	520
DIVERSE	4.6	3	4.4	2	6	537
TENURE	8.8	6	8.6	3	13	542
AGEAPPT	47.9	49	8.5	43	54	539
OUTSIDER	0.17	0	0.37	0	0	542
FOUNDER	0.09	0	0.28	0	0	542

¹The variables are defined as follows:

- SALB = CEO's Salary plus Bonus, fees and commissions.
 TCOMP = SALB plus payments made under long-term compensation plans, restricted stock awards vested or released from restrictions during the year, thrift plan contributions, and other benefits.
 SALES = Net Sales.
 ASSETS = Total Assets.
 GROWTH = $V/ASSET$.
 V = Firm value, defined as market value of equity plus book value of long-term debt, preferred stock, convertible securities and short term debt.
 CR = Cashflow return = operating income before depreciation/V.
 REG = 1 if the firm is in a regulated industry (banking, finance, insurance, public utility or railroad); 0 otherwise.
 TTHREAT = Takeover threat measured as the relative frequency of acquisitions in the 2-digit SIC industry of a firm (among firms listed on NYSE as of December 31, 1980) during 1981-87.
 GP = 1 if the CEO had a golden parachute (that provides certain cash and other benefits if the executive is fired, demoted or resigns within a certain time period following a change in control); 0 otherwise.
 EMP = 1 if the CEO has an explicit employment contract; 0 otherwise.
 CCPLAN = 1 if the CEO has a compensation plan with a change in control provision (that provides for benefits such as early vesting of stock options or acceleration of performance plan benefits); 0 otherwise.
 DIVERSE = Degree of diversification, measured as the number of different lines of business the firm operates at the 3-digit SIC industry level.
 TENURE = The number of years the individual has held the CEO position in the company.
 AGEAPPT = The CEO's age at appointment to the CEO position.
 OUTSIDER = 1 if the individual had been with the company less than four years before being appointed to the CEO position, unless he was the company's founder; 0 otherwise.
 FOUNDER = 1 if the current CEO founded the company; 0 otherwise.

Table 2

Correlations¹

The sample consists of 542 Forbes 800 firms for 1987.

	LTCOMP	GROWTH	LSALES	CR	REG	TTHREAT	GP	EMP	CCPLAN
LSALB	.95 ^a	.05	.43 ^a	.22 ^a	-.28 ^a	.18 ^a	.13 ^a	.11 ^a	.16 ^a
LTCOMP		.03	.42 ^a	.22 ^a	-.28 ^a	.19 ^a	.14 ^a	.14 ^a	.14 ^a
GROWTH			-.32 ^a	-.34 ^a	-.26 ^a	.03	-.05	-.04	-.05
LSALES				.27 ^a	-.17 ^a	.12 ^a	-.06	.02	.05
CR					-.01	.01	.02	.03	.03
REG						-.34 ^a	-.04	-.03	-.06
TTHREAT							.01	.04	.00
GP								-.22 ^a	.27 ^a
EMP									-.10 ^b

^aStatistically significant at the 1% level in 2-tailed test.

^bStatistically significant at the 5% level in 2-tailed test.

¹Variables are defined in Table 1.

Table 3

Explaining Managerial Compensation¹

Coefficient estimates from the OLS regression of CEO compensation on measures of firm size, firm performance, regulation, and the industry-wide threat of takeover. The sample consists of 542 Forbes 800 firms for 1987.

	Dependent Variable = LSALB ²		Dependent Variable = LTCOMP	
	CONSTANT	4.51 ^a (24.16)	4.41 ^a (23.07)	4.58 ^a (22.47)
GROWTH	.14 ^a (4.86)	.14 ^a (5.05)	.12 ^a (3.93)	.12 ^a (4.12)
LSALES	.22 ^a (10.37)	.22 ^a (10.32)	.23 ^a (9.71)	.23 ^a (9.65)
CR	.96 ^a (4.24)	.99 ^a (4.36)	1.02 ^a (4.14)	1.05 ^a (4.25)
REG	-.20 ^a (-3.83)	-.16 ^a (-2.90)	-.24 ^a (-4.19)	-.19 ^a (-3.18)
TTHREAT		.33 ^b (2.05)		.40 ^b (2.30)
Adjusted R ²	.268	.273	.253	.260
Sample Size	542	541	542	541
p-value of F-test	< .001	< .001	< .001	< .001

¹Variables are defined in Table 1.

²t-statistics in parentheses.

^aStatistically significant at the 1% level in 2-tailed test.

^bStatistically significant at the 5% level in 2-tailed test.

Table 4

Incidence of Compensation Assurance Provisions¹

Panel A shows the proportion of firms employing each provision for subgroups with below-median and above-median takeover threat, and for subgroups that were taken over vs. not taken over over the 7 years following the end of 1987. Panel B shows the coefficient estimates from probit regressions of the incidence of each provision as a function of various explanatory variables. The sample consists of 542 Forbes 800 firms for 1987.

Panel A: Proportion of Firms

	Low TTHREAT (n = 270)	High TTHREAT (n = 271)	Taken Over (n = 41)	Not Taken Over (n = 451)
EMP	.10	.12	.06	.11
GP	.47	.49	.19	.47 ^a
CCPLAN	.37	.38	.28	.37 ^b
CONTRACT	.65	.70	.42	.68 ^a

Panel B: Probit Estimates

	Dependent Variable						
	GP		EMP		CCPLAN		CONTRACT
CONSTANT	1.49 ^c (3.07)	1.36 ^c (2.70)	-1.74 ^c (-2.79)	-1.04 (-1.63)	-.37 (-.78)	-1.07 ^d (-2.08)	1.59 ^c (3.21)
POD	-.02 ^c (-4.33)	-.02 ^c (-3.46)	.01 (1.77)	.00 (.84)	-.01 ^d (-2.37)	-.01 (-1.31)	-.02 ^c (-3.97)
LSALES	-.12 (-1.92)	-.13 ^d (-1.97)	.08 (1.06)	.08 (.99)	.08 (1.28)	.12 (1.85)	-.07 (-1.17)
YCO	-.02 ^c (-3.97)	-.02 ^c (-3.69)	-.01 (-1.84)	-.02 ^c (-2.95)	-.02 ^c (-3.41)	-.01 ^c (-2.61)	-.03 ^c (-4.65)
TTHREAT	.29 (.67)	.38 (.83)	.28 (.50)	.28 (.49)	-.08 (-.17)	-.10 (-.22)	1.08 ^d (2.26)
GP				-.93 ^c (-4.65)		.61 ^c (4.59)	
EMP		-.98 ^c (-4.35)				-.26 (-1.24)	
CCPLAN		.59 ^c (4.51)		-.28 (-1.47)			
X ²	41.16	87.05	6.97	37.76	19.35	46.66	42.97
p-value of X ²	<.001	<.001	<.138	<.001	<.001	<.001	<.001

¹CONTRACT = 1 if EMP=1 or GP=1 or CCPLAN=1; 0 otherwise. YCO = Years that the CEO has served with the company. Other variables are defined in Table 1.

^aDifference between the means of the two subsamples significant at the 1% level in 2-tailed test.

^bDifference between the means of the two subsamples significant at the 10% level in 2-tailed test.

^cStatistically significant at the 1% level in 2-tailed test.

^dStatistically significant at the 5% level in 2-tailed test.

Table 5

The Effect of Compensation Assurance Provisions¹

Coefficient estimates from the OLS regression of CEO compensation on measures of firm size, firm performance, regulation, takeover threat, compensation assurance provisions, and interaction variables. The sample consists of 542 Forbes 800 firms for 1987.

	Dependent Variable = LSALB ²				Dependent Variable = LTCOMP			
CONSTANT	4.25 ^a (21.63)	4.41 ^a (22.51)	4.36 ^a (22.30)	4.33 ^a (22.28)	4.29 ^a (20.03)	4.49 ^a (21.06)	4.42 ^a (20.69)	4.40 ^a (20.71)
GROWTH	.15 ^a (5.35)	.15 ^a (5.21)	.15 ^a (5.31)	.14 ^a (5.15)	.13 ^a (4.35)	.13 ^a (4.26)	.13 ^a (4.32)	.13 ^a (4.15)
LSALES	.22 ^a (10.13)	.21 ^a (9.54)	.21 ^a (9.44)	.22 ^a (10.18)	.23 ^a (9.36)	.21 ^a (8.78)	.21 ^a (8.63)	.23 ^a (9.39)
CR	1.14 ^a (3.89)	1.24 ^a (4.17)	1.22 ^a (4.13)	.91 ^a (3.98)	1.26 ^a (3.93)	1.35 ^a (4.18)	1.34 ^a (4.17)	1.00 ^a (4.00)
REG	-.15 ^a (-2.71)	-.16 ^a (-2.93)	-.15 ^a (-2.67)	-.15 ^a (-2.69)	-.18 ^a (-3.02)	-.19 ^a (-3.23)	-.18 ^a (-2.95)	-.18 ^a (-3.03)
TTHREAT*GP	.19 (.73)				.18 ^a (.62)			
TTHREAT*(1-GP)	.47 ^b (2.05)				.60 ^a (2.83)			
TTHREAT*EMP		-.13 (-.28)				.23 (.45)		
TTHREAT*(1-EMP)		.42 ^b (2.48)				.47 ^b (2.54)		
TTHREAT*(CCPLAN)			.11 (.42)				.07 (.24)	
TTHREAT*(1-CCPLAN)			.55 ^a (2.80)				.70 ^a (3.29)	
TTHREAT*(CONTRACT)				.28 (1.72)				.35 ^b (2.01)
TTHREAT*(1-CONTRACT)				.54 ^a (2.95)				.64 ^a (3.18)
GP	.26 ^a (2.64)				.32 ^a (2.96)			
EMP		.34 ^b (2.17)				.31 (1.80)		
CCPLAN			.28 ^a (2.84)				.33 ^a (3.01)	
CONTRACT				.10 ^a (2.77)				.10 ^b (2.50)
Adjusted R ²	.295	.280	.289	.281	.284	.270	.273	.266
Sample Size	522	519	519	541	522	519	519	541
p-value of F-test	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001

¹Variables defined in Table 1.

²t-statistics in parentheses.

^aStatistically significant at the 1% level in 2-tailed test.

^bStatistically significant at the 5% level in 2-tailed test.

Table 6

Explaining Managerial Compensation: Robustness Checks¹

Coefficient estimates from the OLS regression of CEO compensation on various explanatory variables. The sample consists of 542 Forbes 800 firms for 1987.

	Dependent Variable = LSALB ²		Dependent Variable = LTCOMP		Dependent Variable = LSALB ³	Dependent Variable = LSALB ⁴
CONSTANT	5.01 ^a (21.55)	4.28 ^a (16.30)	5.05 ^a (20.01)	4.35 ^a (15.16)	4.30 ^a (22.27)	4.27 ^a (21.30)
GROWTH		.16 ^a (5.63)		.14 ^a (4.64)	.14 ^a (4.95)	.15 ^a (5.20)
LSALES	.20 ^a (9.13)	.23 ^a (10.34)	.21 ^a (8.77)	.24 ^a (9.53)	.22 ^a (10.08)	.23 ^a (10.34)
CR	.73 ^a (3.32)	1.23 ^a (4.28)	.82 ^a (3.47)	1.35 ^a (4.30)	1.09 ^a (3.72)	1.12 ^a (3.81)
REG	-.23 ^a (-4.62)	-.11 ^b (-2.02)	-.26 ^a (-4.75)	-.14 ^b (-2.35)	-.17 ^a (-3.31)	-.17 ^a (-3.08)
THREAT*GP		.10 (.38)		.07 (.25)	-.14 (-.36)	.16 (.48)
THREAT*(1-GP)		.39 ^b (2.04)		.53 ^b (2.50)	.87 ^a (2.70)	.44 (1.61)
GP		.25 ^a (2.58)		.31 ^a (2.92)	.32 ^a (3.65)	.24 ^a (2.58)
DIVERSE	.02 ^a (3.13)	.02 ^a (2.88)	.02 ^a (2.97)	.02 ^a (2.69)		
TENURE	.01 (1.63)	.01 (1.83)	.01 (1.64)	.01 (1.82)		
AGEAPPT	-.01 (-1.43)	-.01 (-1.55)	-.01 (-1.49)	-.01 (-1.64)		
OUTSIDER	.18 ^a (3.08)	.19 ^a (3.30)	.19 ^a (2.99)	.20 ^a (3.16)		
FOUNDER	.02 (.19)	-.02 (-.28)	-.03 (-.36)	-.07 (-.78)		
Adjusted R ²	.273	.332	.266	.318	.297	.289
Sample Size	534	514	534	514	522	523
p-value F-test	<.001	<.001	<.001	<.001	<.001	<.001

¹Variables defined in Table 1.

²t-statistics in parentheses.

³The TTHREAT measure in this column is the relative frequency of takeovers in the industry of the firm over the last 3 years.

⁴The TTHREAT measure in this column is the relative frequency of takeovers in the industry of the firm over the succeeding 7 years.

^aStatistically significant at the 1% level in 2-tailed test.

^bStatistically significant at the 5% level in 2-tailed test.

Table 7

Summary Statistics of CEO Salary plus Bonus by Takeover Threat (TTHREAT)
Decile and the Incidence of Golden Parachute (GP)

The table shows the mean, median and standard deviation of the CEO's salary and bonus (\$'000). The sample is subdivided into groups of firms with and without a golden parachute for their CEO. Each group is ranked by the industry-wide threat of takeover (TTHREAT) and divided into ten portfolios by TTHREAT decile. The sample consists of 522 Forbes 800 firms for 1987 with available data.

TTHREAT	CEOs with no GP (n = 273)			CEOs with GP (n = 249)		
DECILE	MEAN	MEDIAN	STANDARD DEVIATION	MEAN	MEDIAN	STANDARD DEVIATION
1 (low)	444	399	238	834	572	1256
2	446	385	255	915	839	378
3	713	700	382	883	867	294
4	964	878	646	748	661	302
5	1080	500	2826	806	833	303
6	1028	804	785	832	757	404
7	771	702	502	703	711	261
8	868	805	352	861	672	659
9	851	860	333	753	588	390
10	777	726	376	1029	794	799

Table 8

Free Cash Flow and Tax Effects¹

Coefficient estimates from the OLS regression of CEO compensation on various explanatory variables. The sample consists of 542 Forbes 800 firms for 1987.

Dependent Variable = LSALB ²				
CONSTANT	4.51 ^a (24.18)	4.41 ^a (23.07)	4.22 ^a (21.55)	4.25 ^a (21.61)
GROWTH	.13 ^a (4.80)	.14 ^a (5.00)	.15 ^a (5.37)	.15 ^a (5.33)
LSALES	.23 ^a (10.35)	.22 ^a (10.31)	.22 ^a (10.13)	.22 ^a (10.12)
CR	1.05 ^a (4.45)	1.09 ^a (4.61)	1.37 ^a (4.43)	1.14 ^a (3.89)
REG	-.19 ^a (-3.74)	-.15 ^a (-2.78)	-.13 ^b (-2.44)	-.15 ^a (-2.71)
FCFLOW	-.08 (-1.36)	-.09 (-1.51)	-.16 ^b (-2.28)	
TTHREAT		.34 ^b (2.15)		
TTHREAT*GP			.21 (.80)	.19 (.72)
TTHREAT*(1-GP)			.50 ^a (2.57)	.47 ^b (2.40)
GP			.27 ^a (2.74)	.22 ^b (1.00)
PCASH*GP				.04 (.17)
Adjusted R ²	.269	.275	.301	.294
Sample Size	542	541	522	522
p-value of F-test	<.001	<.001	<.001	<.001

¹FCFLOW = Free Cash Flow / Market value of equity, where
 Free Cash Flow = EBIT - (Tax - Deferred Tax + Tax deferred from previous
 year) - Interest expense - Preferred dividend
 - Common dividend

PCASH = Salary plus bonus/Total compensation.

Other variables are defined in Table 1.

²t-statistics in parentheses.

^aStatistically significant at the 1% level in 2-tailed test.

^bStatistically significant at the 5% level in 2-tailed test.