

Discretion in Executive Incentive Contracts

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Abstract

We examine the role of discretion in executive incentive contracts. We consider the costs and benefits of using subjective performance evaluation of executives relative to objective performance measures. We formulate hypotheses based on the theoretical work on discretionary compensation and test these hypotheses empirically using a proprietary dataset of executive bonus plans. We show that discretion is less important in determining CEO pay than the pay of other executives. We also find that discretion is relatively important in determining executive bonuses at larger and privately held firms and that more diversified firms are relatively less likely to compensate their business unit managers based on firm-wide performance. Finally, we consider (and largely dismiss) tax-related explanations for our results.

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1. Introduction

Central to the design of any management incentive compensation plan is the definition of the measures used to evaluate and reward performance. For incentive purposes, an ideal performance measure would reflect a manager's true contribution to firm value, purged of factors beyond her control but including the effect of current actions on the performances of co-workers or on the future profitability of the firm. In practice, the available objective measures are typically either too broad (*e.g.*, company-wide performance affected by all employees as well as external factors) or too narrow (*e.g.*, business-unit accounting performance for managers who can influence firm performance beyond their division). However, while a manager's contribution to firm value can usually not be measured objectively, it can often be subjectively assessed by higher-level managers or the board of directors.

In this paper, we empirically explore the role of discretionary bonuses based on subjective assessments of individual performance. Drawing on the extensive theoretical literature related to the use of subjective performance evaluation, we first discuss the costs and benefits of subjective performance evaluation relative to objective measurement of executive performance. We consider the importance of such factors as costs of making a subjective assessment of performance, the ability of the executive to take non-productive actions that affect the subjective assessment, "externalities" of the executive's actions that cannot be captured by a narrow objective measure, and the risk costs of using a broad objective measure.

We develop a variety of empirical implications based on our interpretation of these models. In particular, we expect that bonuses will be more discretionary (that is, the relative weight on subjective vs. objective performance measures will be higher) in privately held

companies, in companies with more top managers, in larger companies, and in companies with substantial growth opportunities. In addition, we predict that bonuses will be less discretionary for the chief executive officer (CEO) than for lower-level executives, and that bonuses for business-unit executives will be less discretionary, and more based on business-unit rather than company-wide results, in relatively autonomous business units.

Section 3 provides our empirical analysis, based on a confidential survey of 280 bonus plans gathered by a large compensation-consulting firm. Our data, which include detailed information on the use of discretion for several management positions in both public and non-public companies, offer several advantages over data previously used to study discretion in executive bonuses.¹ For example, Bushman, Indjejikian, and Smith (1996) and Ittner, Larcker, and Rajan (1997) also rely on proprietary datasets obtained from compensation consulting firms, but analyze less-inclusive measures of discretion that are available only for CEOs in publicly traded companies.²

Although only a small fraction of our 280 sample companies offer fully discretionary bonus plans, we document a variety of ways that firms can exercise discretion in awarding annual bonuses. For example, individual bonuses may be based in part on subjectively assessed individual performance as well as on accounting-based financial performance. Alternatively, the boards of directors may make discretionary adjustments to the aggregate bonus pool. We show that firms without publicly traded stock use more discretion in allocating bonuses among plan participants and that the use of discretion among publicly traded firms increases with company size and the number of plan participants.

¹ An exception is Gibbs, Merchant, Van der Stede, and Vargus (2002). They use detailed information on employment contracts, as well as employee survey results, to measure the use and effectiveness of subjectivity in pay of car dealership managers.

² Several studies have addressed discretion in executive compensation indirectly. For example, Hayes and Schaefer (2000) design a model of discretionary executive pay that makes predictions (which they confirm empirically) about the relationship between *current* cash compensation and *future* firm performance. Hallock and Oyer (1999) find similar results. Aggarwal and Samwick (2003) draw conclusions about the use of discretion from proxy statement data by considering how pay-performance sensitivities vary across executive positions in public companies.

We also study differences across positions and find that CEOs are less likely to receive bonuses based on individual performance appraisals than are lower-level managers. In addition, we show that business-unit executives in multi-segment or multi-industry firms receive less discretionary pay, and more pay based on unit performance, than do business-unit executives in undiversified single-segment firms.

Section 4 recognizes that several of our primary findings may reflect regulatory constraints on discretionary payments imposed by U.S. tax law. Recent changes in the tax code, effective beginning in 1994, limit the deductibility of “non-performance-based” compensation to \$1 million for top executives in publicly traded U.S. companies. Under the Internal Revenue Service (IRS) definitions, formula-driven bonuses based on objective measures are considered performance based and deductible, while bonuses based on subjective measures are not. We analyze the tax issues affecting discretion in executive incentive contracts and consider how tax changes may drive our results. Overall, we conclude that the new tax law has influenced the use of discretion in executive incentive contracts, but show that our results are not driven by these tax considerations.

Section 5 summarizes our results and concludes. Overall, our evidence is consistent with viewing the role of discretion as correcting or adjusting for imperfect objective performance measures.

2. An Economic Analysis of Subjective Performance Assessments

We define objective performance measures as measures that can be used in court-enforceable contracts. Under this definition, objective measures must be not only observable and verifiable, but must relate to states of the world anticipated in the contract. Subjective performance measures, in contrast, are measures that are observable to the supervisor, but are

not verifiable by the courts (and need not be perfectly observable by the subordinate).³ In addition, subjective measures can include ex post assessments based on resolutions of uncertainty and on realizations of states not anticipated in the incomplete objective contract.⁴

In this section, we explore the role of subjective performance assessments in optimal incentive contracts. We do not develop new theory, but rather summarize and synthesize existing agency-theoretic results on optimal performance measures and subjectivity. We begin in Section 2.1 with a discussion of how subjective assessments can improve upon the available set of objective measures. In Section 2.2, we discuss the limitations and potential costs of basing incentive bonuses on subjective assessments. In Section 2.3 we derive testable implications regarding the trade-off between objective and subjective measures for executives both within firms and across firms.

2.1 *The benefits of subjective performance assessments*

The economic rationale for using subjective performance assessments is rooted in traditional agency-theory framework as introduced by Mirrlees (1974, 1976), Holmstrom (1979), Grossman and Hart (1983) and extended by Baker (1992) and Holmstrom and Milgrom (1991). In a typical “hidden action” model, the subordinate is assumed to take actions, a , to produce stochastic profit, $y(a)$, receiving compensation $w(y,z)$ and utility $u(w,a)$, where z is a vector of other potential measures in the contract. Holmstrom (1979) showed that measure z will be used in the contract only if it is “incrementally informative” about what action the subordinate took. By adding z to the contract, the firm can reduce the payout risk to the employee (which, in turn, reduces the amount it has to pay the employee), or the firm can increase incentives (by increasing the “slope” of the contract) while maintaining the

³ For example, such measures might include assessments of whether a subordinate followed oral instructions, or took actions that improved the measured performance of a co-worker.

⁴ For example, the supervisor might subjectively assess whether the employee took appropriate actions given an unanticipated change in the economic environment, or might “adjust” measured performance for unanticipated events such as a freak snowstorm or terrorist attack.

same expected compensation cost.

Supervisors monitoring and working closely with subordinates are likely to obtain valuable information in assessing their subordinate's activities, and therefore contracts that include a subjective component can improve on contracts based only on output, $y(a)$. For example, suppose that profit is given by $y(a) = a + \varepsilon + \mu$, where ε and μ are uncorrelated types of random noise, and that the firm observes the realization of μ ex post. Then, the firm can improve on the output-only contract $w(y)$ with a contract $w(y,z)$, where $z(a) = a + \varepsilon$ is a subjective assessment of performance that eliminates noise ex post.⁵

The example above illustrates how subjective assessments can improve upon contracts based only on output, but not how subjective assessments will be used in addition to, or instead of, objective performance measures other than profits. Baker (1992) and Holmstrom and Milgrom (1991) show that basing pay on measures other than profit provides incentives to “do the wrong thing” in a sense not captured by the earlier agency models. For example, paying a divisional manager strictly on divisional profits provides no incentives to help other divisions through managerial collegiality or by exploiting cross-selling opportunities. Similarly, paying an executive based on current accounting earnings rather than long-run shareholder value provides no incentives to take actions today that increase future profits (especially if the horizon for the project exceeds that of the executive).

Subjective performance assessments can reduce “distortions” in objective performance measures. For example, the division manager can receive part of his bonus based on divisional performance and part based on a subjective assessment of his effect on the performances of other divisions. Or, the executive can be rewarded on accounting profits plus a subjective assessment of how current activities have created (or destroyed) long-run value creation. Using subjective assessments in conjunction with objective measures can therefore

⁵ Actually, in this case z is a “sufficient statistic” for y , and the optimal contract will be $w(z)$. However, if the firm observes a noisy (rather than perfect) signal for μ , the contract will be $w(y,z)$.

mitigate the dysfunctional incentives caused by imperfect objective measurement.

Discretionary bonuses tied to subjective performance assessments also allow contracts to adapt to changing economic environments. Court-enforceable contracts written at a point in time but designed to guide decisions over time will be inherently incomplete, because it is impossible (or at least prohibitively costly) to specify terms of trade that cover every conceivable state and contingency. Subjective assessments can be made after the state is revealed, and the discretionary bonuses can therefore provide a state-contingent form of ex post settling-up (Fama 1980).

In summary, basing pay on subjective performance assessments can improve on contracts based only on objective measures by reducing the risk of overly broad performance measures (such as $y(a)$) and by reducing dysfunctional incentives associated with “narrow” measures (such as accounting earnings or divisional profits). In addition, state-contingent discretionary bonuses allow incomplete contracts to adapt to changing economic environments.

2.2 *The costs of subjective performance assessments*

The analysis in the prior subsection suggests that contracts based on subjective assessments (that reduce risk, mitigate distortions, and provide state-contingent ex post payouts) strictly dominate contracts based on objective measures. We now explore factors that limit (and sometimes preclude) the usefulness of subjective assessments in optimal incentive contracts.

ENFORCEMENT. By (our) definition, contracts based on subjective assessments cannot be enforced by courts, because the measures are non-verifiable ex post or unanticipated ex ante. Consequently, the firm can refuse to pay a promised discretionary bonus without reprisal from the courts (and, similarly, because these “bonuses” can be negative as well as positive,

the employee can refuse to pay the firm without court reprisal). In order for subjective assessments to be effective, the agreements must be self-enforcing: the present value of honoring the contract must be greater than the short-run benefit from reneging on it.

Baker, Gibbons, and Murphy (1994) explicitly consider interactions between an imperfect objective measure and a perfect subjective measure that is observable by the contracting parties but not verifiable by the courts.⁶ They consider trigger-strategy equilibria within a repeated game in which, after the firm reneges on a promised discretionary bonus, it can only enter into objective court-enforceable contracts in the future. They show that, at sufficiently small discount rates (interpreted as a long expected firm horizon), the first best can be achieved using only subjective performance assessments. But, as the discount rate increases, discretionary bonuses will be less than first best, and the firm will use a combination of subjective and imperfect objective measures.

SUPERVISORY PREFERENCES. In many (if not most) cases, the supervisor with the information necessary to make subjective assessments is not the ultimate principal, but rather is an agent in a hierarchy of principal-agent relationships. Because the decision maker (the supervisor) is not the residual claimant, the temptation to renege on a promised bonus is not the cost savings of the bonus, since the supervisor does not get to “pocket” this savings. Rather, the temptation to renege reflects a temptation to indulge in favoritism (by giving bonuses to preferred but undeserving employees) or to shirk on evaluation efforts (by rewarding randomly or equally, rather than in proportion to assessed performance).

Prendergast and Topel (1996) analyze favoritism in subjective performance assessments. In their model, increasing the importance of discretionary bonuses reduces the accuracy of supervisory assessments, because supervisors indulge in more favoritism when

⁶ Bull (1987) and Levin (2003) analyze self-enforcing contracts based on non-verifiable performance measures in the absence of any objective measures. Like Baker-Gibbons-Murphy, they show that the use of such measures is limited by reputational concerns.

the stakes to subordinates are higher. In addition, subordinates “charge” for the increased arbitrariness of pay by demanding higher expected compensation. These factors will limit both the informativeness and the use of subjective performance assessments.

A common malady of subjective performance appraisal systems is the tendency of supervisors to assign uniform ratings to employees regardless of performance (Medoff and Abraham, 1980). Baker, Jensen, and Murphy (1988) and Murphy (1992) argue that self-interested supervisors have little incentive to invest in performance evaluation, both because careful appraisals take time away from better-rewarded activities, and because supervisors face large nonpecuniary costs from disgruntled employees with mediocre or low evaluations. The resulting ratings compression reduces the effectiveness of subjective assessments in providing incentives to employees.

INFLUENCE ACTIVITY. When supervisors have authority to pay discretionary bonuses, subordinates will waste valuable time trying to influence the supervisor’s subjective assessments. These “influence activities” create deadweight losses that must be reflected in either lower wages or lower profits. Milgrom (1988) shows that these influence activities make it efficient to restrict the use of discretion in employment contracts.

MEASUREMENT COSTS. In many cases, subjective performance assessments can be produced at little cost as a by-product of a close employment relation. For example, a supervisor who works closely with a subordinate on a daily basis can produce a highly accurate assessment at low cost, where a supervisor who meets only occasionally with a distant subordinate cannot produce such an assessment. Similarly, a supervisor who directly “consumes” the output of a subordinate (e.g., a professor consumes the output of research assistants) can assess performance more accurately and at lower cost than a supervisor who is only passively concerned with subordinate output.

ASYMMETRIC BELIEFS. MacLeod (2003) considers discretionary bonuses in situations where

supervisors and subordinates observe different non-verifiable signals about performance, and shows that discretion is limited by asymmetric assessments of performance. In particular, subjective assessments can be used effectively only when the signals received by supervisor and subordinate are highly correlated. When the signals are uncorrelated, the supervisor (in the optimal contract) assigns a single assessment to all but the very worst subordinates, resulting in wage compression and low-powered incentives.

AVAILABLE OBJECTIVE MEASURES. Finally, subjective assessment is obviously limited by the accuracy of available objective measures. Baker, Gibbons, and Murphy (1994) show that sufficiently good objective measures can “crowd out” even better subjective measures. More generally, the analysis in this subsection has identified a variety of factors (enforceability, measurement costs, supervisor favoritism, influence activities, and asymmetric beliefs) that make subjective assessments more costly than objective assessments. The analysis in the prior subsection identified factors (increased incentives by reducing both distortion and risk) that make subjective assessments preferred to objective assessments. Clearly, if objective measures are available that yield (close to) the benefits of subjective assessments without the associated costs, then the optimal contract will be based on objective rather than subjective measures.

2.3 *Empirical Implications*

Our dataset, described in detail in the next section, contains information on the use of discretion in annual bonuses for corporate executives and divisional-level managers in 280 publicly traded and privately held organizations. In this subsection, we use our analyses of the costs and benefits of subjective performance assessments to derive empirical implications, focusing on those that can be tested using our data.

2.3.1 *Differences Across Firms*

Under our framework, subjective assessments are useful in three distinct ways: they can be used to reduce the noisiness of objective measures, they can be used to offset the distortion in objective measures, and they can be used to adapt incentives to changing environments. These latter two benefits of subjective assessments can also be achieved by tying pay to objective market-based measures of shareholder value. In particular, as long as stock markets are reasonably efficient (that is, as long as any informational advantages of managers are short-lived), stock-based compensation provides non-distortionary and adaptive incentives for managers to increase the value of their firms.⁷ Therefore, for companies that can effectively utilize stock-based compensation, we view the primary advantage of subjective assessments as noise reduction.

Privately held firms do not have market-based measures of shareholder value, and therefore must look for other ways to provide incentives not captured by the available objective measures (such as inducing managerial collegiality or providing incentive to take current actions that increase future profits).⁸ We therefore predict that private firms must rely more heavily on subjective performance assessment, leading to our first prediction:

P1. Bonuses will be more discretionary (that is, the relative weight on subjective vs. objective performance measures will be higher) in privately held companies than in publicly held corporations.

⁷ Critics (e.g., Cassidy 2002) have attributed the recent accounting scandals at several major corporations to the contemporaneous increase in stock-based compensation. Without analyzing the merits of these claims, we note the claims are based on informational asymmetries in which managers manipulate current earnings to “fool the market” about future earnings. We believe that such manipulation opportunities, if they exist, are short-lived and can be mitigated through compensation tied to “long-run” stock-price performance.

⁸ Many non-public companies have closely held stock, and this stock ownership can align employees’ incentives efficiently if employees anticipate a market transaction for their shares (such as an acquisition or an IPO). However, most of the non-public firms in our sample are subsidiaries of large domestic or foreign-owned companies, non-profit companies, or mutual financial companies. These entities cannot offer meaningful ownership incentives to employees.

For publicly traded corporations, the “noise” in stock prices relevant for rewarding individual executives includes both external factors (e.g., general market movements) and internal factors (e.g., the performances of other executives and employees who also directly impact firm value). We expect that increases in either of these sources of noise will lead companies to use relatively more discretionary compensation for two reasons. First, firms with volatile stock prices will use discretionary payouts to offset the risk in stock-based pay. Second, firms will use subjective assessments as a (partial) substitute for stock-based pay in more volatile environments. These observations lead to two additional predictions, applicable for publicly traded companies (but not for privately held companies that lack market-based measures):

P2. Bonuses in publicly traded firms will be more discretionary in larger companies and in companies with more top executives.

P3. Bonuses in publicly traded firms will be more discretionary in companies with higher systematic risk.

Some managerial actions (e.g., pricing and operating decisions) affect contemporaneous accounting performance, while other actions (e.g., research and development expenditures or succession planning) will not be reflected in accounting performance for several years. In companies where managerial actions largely affect contemporaneous but not future performance, incentives can be effectively provided through accounting-based bonuses, with less emphasis on subjective assessments or (noisy) market-based measures. On the other hand, in environments where current actions affect future but not current accounting performance, we expect that companies will rely on both discretion and stock-based pay (with an emphasis on the former because stock-based measures are especially noisy in such

environments).⁹

P4. Bonuses will be more discretionary in companies with substantial growth or investment opportunities.

2.3.2 Differences Within Firms

We predict that the importance of discretionary payouts will decrease with the quality of available objective measures and increase with the quality of subjective assessments. These ideas suggest that bonuses will be less discretionary for CEOs than for lower-level executives.¹⁰ First, payouts tied to stock-price performance are particularly useful for CEOs, because CEOs can take actions that affect firm-wide performance in both current and future years, and because the noise in stock prices from internal factors (the performances of other executives and employees who also directly impact firm value) is less for the CEO than for lower-level executives.¹¹ Second, boards of directors, meeting irregularly in the CEO's office and digesting primarily only that information offered by the CEO, can seldom offer meaningful subjective assessments of CEO performance. On the other hand, the CEO observes and monitors his management team on a daily basis, and is likely in a good position to make valid assessments.

P5. Bonuses will be less discretionary for the CEO than for lower-level executives.

Across firms, an important potential distortion in objective measures relates to

⁹ This reasoning is similar to an idea developed and tested by Bushman, Indjejikian, and Smith (1995).

¹⁰ This prediction is similar to the predictions of the model developed by Aggarwal and Samwick (2003). However, where their empirical analyses (based on empirical pay-performance sensitivities across managers) cannot identify discretion as the source of their results, we will look directly at the role of discretion and assessment of individual performance.

¹¹ Underlying this analysis is the assumption that the CEO's decisions have a greater impact on shareholder value than do decisions by lower-level executives, because these latter decisions must be approved by the CEO before they can be implemented. Therefore, stock-based pay imposes "CEO noise" on lower-level executives.

“interdependencies.” If business units have little interaction, then business-unit accounting profits should be a good objective measure. However, if one division has complex vertical and horizontal interdependencies with other company divisions, each division manager’s performance is not captured by his division’s performance. We expect employees at firms with interdependent business units to have more pay based on subjective and company-wide measures than employees at firms with autonomous units. We expect employees’ pay to be primarily based on objective business unit performance measures at firms with autonomous units.

P6. Bonuses will be less discretionary, and more based on business-unit rather than company-wide results, in relatively autonomous business units.

3. Empirical Analysis of Discretion in Executive Bonus Plans

The primary components of executive compensation packages include base salaries, annual bonuses, stock-based pay (including stock options, restricted stock, and performance share plans), and benefits (Murphy, 1999). Although comprising only a fraction of total compensation, the annual bonus is the pay component most susceptible to meaningful discretion. The level and annual revisions of base salaries and benefits, for example, are largely determined by competitive market surveys with relatively little scope for individual adjustments. Similarly, annual grants of restricted stock or options are typically set either as a fixed fraction of base salary or as a fixed number of shares (Hall, 2000), and the post-grant ultimate payouts are determined strictly by stock-price realizations.¹² In contrast, while “target” bonuses are often tied to base salaries (and are therefore non-discretionary), the ultimate payouts under annual bonus plans can be highly discretionary.

¹² The much-maligned practice of resetting exercise prices for options following large declines in stock prices can be interpreted as a discretionary adjustment to stock option payouts. However, such repricings have historically been infrequent and have virtually disappeared since accounting-rule changes in 1998.

Our primary data source of discretion in annual incentive plans is a detailed survey conducted by the consulting firm of Towers Perrin in 1996-97 and focused on plans in place between 1993 and 1995. The “Annual Incentive Plan” survey includes 262 publicly traded and non-public firms with fairly complete details on the role of discretion in annual bonuses. Due to incomplete information, insufficient details, irrelevance of some issues to some firms, and limits with matching financial information from Compustat and CRSP, our samples are smaller for some parts of our analyses.

The survey provides detailed data on the annual bonus plan covering the CEO and other top executives. The number of eligible participants in the surveyed plans ranges from one (only the CEO) to 25,000 with a median of 125 participants. The firms in the survey range from 25 to 500,000 employees (median 7,650), and the median bonus plan in the survey covers the top 2% of company employees. The sample firms span most sectors of the economy, representing virtually every two-digit SIC code. Electric utilities (twenty firms), chemicals/pharmaceuticals (twenty-four), and banks (ten) are the most highly represented industries.

3.1 *Discretion in Annual Bonus Plans*

While companies use a variety of financial and non-financial performance measures in their annual bonus plans, almost all companies rely primarily on one or more measures of accounting profit. In order to understand the scope for discretion in these bonus plans in our sample firms, it is useful to first describe in some detail how bonuses are determined.

Panel A of Table 1 presents prevalence statistics on the bonus-setting process, for our full 262-firm sample and for firms grouped by whether the firm has publicly traded equity (which, from Section 2, can substitute for discretionary pay).¹³ Participants in executive

¹³ Ownership status could not be determined for one sample firm. “Not Publicly Traded” firms include 45 private firms and 21 subsidiaries of publicly traded domestic or foreign corporations. To be in the sample, the subsidiaries must have their own human resource department and their own management bonus plan

bonus plans typically negotiate “target bonuses” that specify the expected bonus payment upon achievement of a predetermined performance standard. In about a third (35%) of our sample, the aggregate “bonus pool” is determined by summing the participants’ target bonuses, and adjusting this sum up or down depending on realized performance. In another 35% of our sample firms, the aggregate bonus pool is determined by a schedule or formula.¹⁴ In 6% of the sample, the bonus pool is determined *ex post* after the annual results are tallied, subjectively and without explicit schedules or target bonuses. Finally, 24% of the companies either used a different approach, or reported insufficient information to identify their approach.

As reported in Panel A of Table 1, only 6% of management bonus plans are fully discretionary. However, there are a variety of ways that firms can exercise discretion in awarding annual bonuses. For example, individual bonuses may be based in part on subjectively assessed individual performance as well as on accounting-based financial performance. Or, the boards of directors may make discretionary adjustments to the aggregate bonus pool.

The Annual Incentive Plan survey includes several questions that reveal the ways firms use discretion in awarding bonuses. Panel B of Table 1 presents prevalence statistics on the role of discretion in management bonus plans, for our full sample and for firms grouped by ownership structure. Almost two-thirds (65%) of the sample firms base individual bonuses at least in part on non-financial measures of individual performance.

To capture the distinction between discretion in setting the size of the bonus pool and discretion in allocating bonus funds, we created two indicator variables. The first indicates whether or not the firm uses discretion in determining the size of the overall pool of funds

separate from parent-level plans, and are therefore presumably quite independent from their parent organizations.

¹⁴ Firms in this category often do not explicitly define a bonus pool, but rather compute schedule-based bonuses by individual. We treat the aggregation of these individual bonuses as the implicit bonus pool.

available for bonuses. In most cases where this variable equals one, the firm has no set formula or schedule for determining its bonus pool but reported some discretion in determining individual employees' bonuses. The second variable captures whether the firm has discretion in allocating bonus funds to individuals, whether or not the aggregate pool is non-discretionary. As indicated in Panel B of Table 1, boards have discretion in determining the aggregate amount of bonuses paid in 42% of the sample firms, and have discretion in allocating the bonus pool in 70% of the sample firms.

The survey also identified discretion by asking if firms had overridden the formulaic bonus calculations in any of the five years leading up to the survey. As reported in Panel B of Table 1, 58 firms (22%), including 28 firms that indicated there was no discretion in determining the size of their bonus pools or the allocation of that pool to individuals, said that they had overridden their plans and paid bonuses when a strict interpretation of the plans would have led to no bonuses. Eight of these overrides were for *all* employees covered by the bonus plan, while the others targeted individuals. Reasons given for overriding formulas included "extraordinary individual performance", "externalities", "to reflect reorganization and impact of new units on performance", and "unrealistic budget/internal equity." Many of these firms were in or emerging from financial distress when they overrode their bonus plan, which may have been an attempt to retain workers when the firm had a bad year relative to other firms that might employ its workers (see Oyer, 2003).

Fourteen firms that indicated no discretion in determining the size or allocation of its pool said they had disallowed bonuses that formulas warranted. In eleven cases, bonuses were disallowed for *some* eligible employees, while they were disallowed for *all* eligible employees in three cases. Reasons given for disallowing bonuses focused on poor individual performance and underperformance relative to similar firms.

Although the prevalence statistics in Table 1 do not provide direct evidence on the relative benefits and limitations of discretionary bonus plans, several observations should be

noted. First, consistent with our prediction (P1), the use of individual performance appraisals in non-public firms (75%) is significantly higher than its use in publicly traded firms (62%); non-public firms are also more likely to use discretionary allocations of bonus pools. Second, although bonus allocations are often discretionary, the overall size of the bonus pool is fixed (i.e., non-discretionary) for about 60% of the sample firms. Fixing the overall pool exacerbates problems with imperfect objective measures, but also reduces the benefits of unproductive influence activities and makes renegeing more visible (which, in turn, will reduce the firm's temptation to renege on promised bonus payments). Finally, there is some evidence that firms renege on promised bonus payments by disallowing warranted bonuses.

3.2 *The Determinants of Discretion*

Tables 2 and 3 begin our analyses of the determinants of the use of discretion and allow us to evaluate our first two predictions. Table 2 presents results from logistic regressions predicting whether firms base bonuses on individual performance assessments (columns (1) and (2)), or use discretion in allocating bonuses to individuals (columns (3) and (4)). The independent variables include a dummy variable for privately held firms (or subsidiaries of domestic or foreign publicly traded firms), the number of participants in the bonus plan, participants interacted with ownership, and broad industry dummy variables.

The dependent variable in columns (1) and (2) of Table 2 is a dummy variable equaling one if the firm bases bonuses in part on assessments of individual performance. The coefficient on "Not Public" in column (1) is positive and significant, suggesting that publicly traded firms are less likely to use individual performance assessments in their management bonus plans. The coefficient on $\text{Ln}(\text{Eligible Employees})$ in column (1) is insignificant. Column (2) includes controls for finance and insurance firms ("Finance") and electric and gas utilities ("Utilities"), both of which are insignificant. In column (2), we also include an interaction between eligible employees and Not Public. This interaction term is negative and

marginally significant, indicating that the use of individual performance in private firms actually decreases with the number of plan participants. The dependent variable in columns (3) and (4) of Table 2 is a dummy variable equaling one if the firm uses discretion in allocating bonuses to plan participants. The results are largely consistent with those for individual performance assessments.

As reported in Table 1, nearly two-thirds of the sample companies base bonuses, in part, on subjective assessments of individual performance. In addition to describing the existence of individual performance measures, the Annual Incentive Plan survey identifies the fraction of the bonus based on individual performance evaluation for five positions: the Chief Executive Officer (CEO), the Chief Financial Officer (CFO), the Top Legal Executive (General Counsel), a “representative” Group Head, and a “representative” Business Unit Executive.¹⁵ Table 3 reports coefficients on OLS regressions using the same independent variables as in Table 2 but two new dependent variables: the fraction of the CEO’s bonus based on individual performance, and the average fraction (across up to five executives) of bonuses based on individual performance.¹⁶

The results of the regressions in Table 3 are qualitatively similar to those in Table 2, though the table provides stronger statistical support for our predictions. The coefficients on Not Public of .107 in column (1) suggests that CEOs in private firms receive 11% more of their bonus based on subjective measures of individual performance than do CEOs in public firms. The coefficient on eligible employees in columns (1) and (3) are also positive and significant, consistent with our prediction that discretion increases with the size of the top management team (P2). But, also consistent with this prediction, discretion is not related to firm size at firms that are not publicly traded. The opposite and nearly equal coefficients for

¹⁵ Unfortunately, the survey identified only “representative” group and business-unit heads, and provided no information on the size or industry of the group or business unit.

¹⁶ Because the discretion weights are censored at zero and one, we ran Tobit regressions as well. The results were similar in both economic and statistical significance.

employees and the employee/non-public interaction in column (2) and, especially, column (4) suggest that the number of executives does not affect the use of subjective measures at firms without publicly traded stock.

Table 4 explores P3 and P4, as well as further testing P2, for a sub-sample of 174 sample companies that are publicly traded and matched to Compustat corporate data. The table uses the same dependent variables as Table 3—the fraction of the CEO's bonus that is based on individual performance assessments (columns 1-2) and “average” fraction based on individual assessments for up to five executive positions (columns 3-4). Columns (1) and (3) include as independent variables only $\text{Ln}(\text{Market Cap})$ and $\text{Ln}(\text{Eligible Employees})$. Consistent with P2, both coefficients are positive and significant, supporting the hypothesis that, in publicly traded firms, discretion will increase with both market capitalization and the size of the management team.

As we discussed in explaining P4 above, contemporaneous accounting profit is a particularly poor measure of management contribution to firm value in high growth firms and other firms where management take current actions that affect future performance. We therefore expect firms with high growth or investment opportunities to use more discretion in their bonus plans. In columns (2) and (4) of Table 4 we introduce two proxies for investment opportunities: the market-to-book ratio and the actual growth in sales from 1993-1997 (which includes both the two years before and the two years after the survey). We expect both variables to be positive, but in fact we find the coefficients on sales growth to be negative and marginally significant. This sharply disagrees with P4. We suspect that these results are driven by at least one of three alternative hypotheses. The negative growth/discretion relationship could reflect the fact that some firms use growth as an objective measure. One possible explanation for this is that firms with better prospects also have greater risk of failure and therefore cannot use self-enforcing contracts that rely on many future years of employee-firm interaction for implementation. Finally, these firms may find stock-based pay

to be a relatively better incentive than cash bonuses.

Finally, because we predict that bonuses will be less discretionary in public companies with high external noise (P3), columns (2) and (4) include the annual volatility of continuous stock returns computed from monthly Compustat data as a proxy for systematic risk. The coefficients in both regressions are insignificantly different from zero.¹⁷

Overall, we view the results in Tables 1-4 as providing evidence that strongly supports predictions P1 and P2. However, we found no support for P3 or P4. These results are consistent with firms using discretion as a substitute for firm-wide objective measures, including stock price, when internal noise factors (such as temptations to free ride) are significant. The results are also consistent with firms using subjectively determined bonuses as a substitute for equity-based compensation when a contractible measure of firm value is not available. We found no support for firms using discretionary bonuses to limit the risk imposed on managers by external factors such as market conditions. We also did not find evidence that firms use discretionary bonuses to mitigate manager's incentives to increase current objective measures at the expense of future firm value.

3.3 *Within-Firm Variation in Discretion*

Table 5 presents summary statistics for each position on the prevalence of individual performance assessments, and the fraction of bonuses based on these assessments, for 262 firms that provided usable data by position. As reported in column (1) and consistent with prediction P3, just over half (51%) of the CEOs in the sample received bonuses based on individual performance assessments, while 60% or more CFOs, general counsels, and group or business-unit executives received discretionary bonuses. Consistent with prediction P1, individual performance assessments are significantly less likely in publicly traded firms than

¹⁷ Bushman, Indjejikian, and Smith (1996) also find no significant relationship between include stock-return volatility and CEO individual performance evaluation.

in non–publicly traded firms.

Columns (4), (5), and (6) of Table 5 report the average fraction of annual bonus based on subjectively assessed individual performance for each of the five executive positions. Consistent with prediction P5, only 31% of the bonus for the sample CEOs is based on individual performance, while between 35%-37% of the bonus for the other executives is based on individual performance. The weight on individual performance assessments is higher in non-public firms than in publicly traded firms (although the difference is not statistically significant for business-unit executives).

Table 6 provides summary statistics on the prevalence of bonus plans with no discretion, partial discretion, and “full discretion” (where 100% of the bonus is based on subjective assessments). The cross-tabulation is based on the sub-sample of 230 firms that included usable information on the fraction of the bonus based on individual performance for the CEO and for at least one of the other four executives. The table shows, for example, that 82 of the 230 firms (36%) had objectively determined bonuses for all five positions, while 45 (20%) had fully discretionary bonus payouts for these positions. The cross-tabulation also reveals that most of the data (84%) are along the diagonal: firms that offer no, partial, or fully discretionary payouts for any executive are likely to offer similar plans to other executives. The exception is that the CEO is less likely to be paid based on subjective assessments than are lower-level executives. For example, in 33 (14%) firms there is no discretion in the CEO’s payouts, but partial or full discretion in the payouts for executives below the CEO.

Table 7 reports coefficients from regressions that explore how the use of discretion varies within firms. The regressions are based on a data set that includes up to five observations for each sample firm, one observation for each reported position. The dependent variable is the fraction of the bonus based on individual performance, and the independent variables include dummy variables for each position (the CEO is the omitted category), as

well as the independent variables in Tables 2 and 3.¹⁸ The position-dummy coefficients in column (1) are all positive and significantly from zero (i.e., the CEO), but are not significantly different from each other. The regression in column (2) includes a single independent variable, “Non-CEO” which is a dummy variable set to one for all positions except the CEO. The coefficient is positive and highly significant, indicating that bonuses are less discretionary for the CEO than for lower-level executives. Finally, the regressions in (3) and (4) include Not Public, Ln(Eligible Employees), and their interaction as additional explanatory variables. The coefficients and significance of the position dummies are not changed, and regressions indicate that the fraction of bonuses based on individual performance is higher in private firms and, among publicly traded firms, is increasing in the number of bonus-eligible executives.¹⁹

Columns (5) and (6) of Table 7 include firm fixed-effects to capture factors that affect the use of discretion among executives within a firm, but vary across firms. The estimated coefficients on the position dummies are similar to those reported in columns (1) and (2), but the t-statistics are much higher and confirm the result that the CEO receives less discretionary pay than do executives below the CEO. Moreover, the high R-squares of the fixed-effects regressions reflect that most of the variation in discretionary bonuses is between rather than within firms (as we would expect, given the results in Table 6.)

We predicted that bonuses for autonomous business units are less likely to be discretionary and more likely to be based on business-unit rather than corporate performance than are bonuses for business units with close horizontal and/or vertical ties to the parent organization. Unfortunately, the Annual Incentive Plan survey provides information only for

¹⁸ We have dropped broad-industry controls from our reported regressions, because (as in Tables 2 and 3) they are uniformly insignificant.

¹⁹ As we have already shown, the use of discretion is highly correlated within firms. The t-statistics in Table 7 are based on Huber/White standard errors that allow the OLS errors to be correlated for observations within a firm and for heteroskedasticity in the errors across firms.

“representative” group and business-unit executives, and provides no information on the autonomy, size, or industry of the reported executive. Therefore, we cannot test our prediction directly, but can do so indirectly by categorizing sample firms based on the characteristics of their business segments or divisions. After eliminating private companies and companies without complete bonus-composition data for group or business-unit executives, we were able to match 129 of our sample firms to Compustat’s Business Segment database. For this sub-sample we computed the number of business segments the company reports, and also the number of industries (defined by 2-digit SIC codes) in which the company operates. We posit that companies with multiple segments operating in multiple industries are more likely to have autonomous business units, relative to companies with only a single segment operating in only a single industry.

Table 8 shows the average composition of annual bonuses for group and business-unit executives for firms grouped by the number of business segments and industries.²⁰ For firms reporting bonus compositions for both group executives and business-unit executives, we averaged and used a single number for each firm. As reported in the table, company-wide performance accounts for an average of 46% of bonuses for business-unit executives in firms with a single business segment, while unit and individual performance account for 21% and 32% respectively. For companies with multiple business segments, company, unit, and individual performance account for 35%, 41%, and 24% of annual bonuses, respectively.

The right-hand panel of Table 8 shows bonus compositions for business-unit executives for firms grouped by whether they operate in a single or in multiple 2-digit SIC industries. As reported, unit executives in firms operating in a single industry receive 46%, 18%, and 36% of their bonus based on corporate, unit, or individual performance, respectively, while unit

²⁰ Bushman, Indjejikian, and Smith (1995) show that division managers in firms where divisions are more interdependent are rewarded more for company-wide performance than division managers at firms with autonomous divisions. They do not consider discretion as a way to minimize externalities across divisions, however.

executives in multi-industry companies receive 38%, 36%, and 25% of their bonuses based respectively on corporate, unit, or individual performance. Overall, the results in Table 8 suggest that business-unit executives in multi-segment or multi-industry firms receive less discretionary pay, and more pay based on unit performance, than do business-unit executives in undiversified single-segment firms. In general, we believe that the analysis in Tables 5-8 provide strong evidence to support P5 and P6.

4. Regulatory Constraints on Discretion

The evidence in Section 3 on the use of discretion in executive bonus plans is broadly consistent with several of our predictions. However, our primary findings—that discretionary payments are more prevalent in privately held firms than in public firms, and are less prevalent for CEOs than for other executives—may also reflect regulatory constraints on discretionary payments imposed by U.S. tax law. In this section, we describe the tax considerations affecting discretion in executive incentive contracts, and analyze the extent to which such considerations drive our results.

Corporations are allowed to deduct from income all “reasonable” compensation expenses. Under Section 162(m) of the Internal Revenue Code—effective for tax years beginning on or after January 1, 1994—compensation in excess of \$1 million is considered unreasonable and therefore not deductible. The tax code provides several exemptions from the million-dollar limit that are relevant for our analysis. First, Section 162(m) only applies to public firms and not to privately held firms. Second, Section 162(m) only applies to compensation paid to the CEO and the four highest-paid executive officers as disclosed in annual proxy statements (non-officer compensation is fully deductible, even if in excess of the million-dollar limit). Finally, and most importantly for our purposes, Section 162(m) does not apply to compensation considered “performance-based” by the IRS.

Performance-based compensation, as defined under the new tax law, includes commissions and pay based on the attainment of one or more performance goals, but only if (1) the goals are determined by an independent compensation committee, and (2) the terms of the contract (including goals) are disclosed to shareholders and approved by shareholders before payment. Under this definition, a bonus based on formula-driven objective performance measures is considered performance based (so long as the bonus plan has been approved by shareholders), while a discretionary bonus based on ex post subjective assessments is not considered performance based (because there are not predetermined performance goals). In addition, the new tax law has been interpreted as allowing negative but not positive discretionary payments: the board can use its discretion to pay less but not more than the amount indicated by a shareholder-approved objective plan.

Most executive pay packages contain four basic components: a base salary, an annual bonus, stock options, and long-term incentive plans (Murphy, 1999). Base salaries are considered non-performance-based for Section 162(m) purposes, while most stock option plans and long-term incentive plans easily qualify as performance based and therefore deductible. To preserve the deductibility of annual bonus payouts, public companies paying cash compensation (salary and bonus) in excess of \$1 million to any “proxy-named executive” must therefore either reduce the level of cash pay (so that non-performance-based pay falls below \$1 million) or modify the bonus plan so that it qualifies as performance based.

The new tax law became effective the year before the Towers Perrin survey was conducted, and respondents were asked to describe any changes made to the annual bonus plan to comply with Section 162(m). Of the 190 (out of 195) publicly traded companies in our sample responding to this portion of the survey, nearly half (84 firms) reported tax-

related changes.²¹ Table 9 shows that companies with high-paid executives were more likely to adjust their plans than were companies with lower-paid executives. The compensation data is extracted from Compustat's ExecuComp database; we were able to obtain 1993 pay data for 161 of our 195 publicly traded companies, and we focus on 1993 because this was the year prior to the effective date for the tax law. The data in the table indicate that nearly two thirds of the companies with executives receiving more than \$1 million in 1993 cash compensation modified their plan to comply with Section 162(m), while only one third of the companies paying less than \$1 million modified their plan.

In most cases, compliance with Section 162(m) involved imposing maximums on individual payouts to proxy-named executives, and submitting the plans to a shareholder approval. However, in nineteen companies compliance involved eliminating discretionary payouts for proxy-named executives, while twelve companies explicitly incorporated "negative discretion" in otherwise objective-based bonus formulas. The right-most column in Table 9 shows that companies with executives paid more than \$1 million in cash compensation were much more likely to make adjustments to the discretionary components of bonuses than were companies with executives paid less than \$1 million. In particular, approximately 28% of companies paying more than \$1 million either eliminated discretion or introduced negative discretion, while only 8% of companies paying less than \$1 million made adjustments to discretionary components.

In Section 3, we documented (see Tables 1-4) that private firms use more discretion in bonus payouts than do public firms, and we attributed this difference to the fact that private firms lack an objective measure of wealth creation (i.e., shareholder value), and consequently put higher weight on subjective measures. An alternative hypothesis is that private firms use more discretion than public firms because they are not subject to the restrictions on

²¹ We focus on public firms because private firms are not subject to Section 162(m). We note, however, that three subsidiaries of public firms—categorized by us as "not publicly traded"—also modified their plans.

deductibility under Section 162(m) of the tax code. Similarly, in Tables 4-6 we documented less discretion in CEO bonuses than in bonuses for lower-level executives, and attributed this result to the fact that the available company-wide objective performance measures are better for the CEO than for other executives. However, an alternative tax-driven hypothesis is that CEOs are more likely to be subject to Section 162(m) than are lower-paid executives, and companies reduce the use of discretion in CEO contracts to retain deductibility.

If the use of discretion reflects tax considerations, we would expect the discretionary component of bonuses to be lower for executives receiving more than \$1 million in cash compensation than executives receiving less than \$1 million. Table 10 shows the fraction of bonuses based on individual performance assessments for CEOs, CFOs, and General Counsels where we could directly match ExecuComp pay data with the Annual Incentive Plan survey data.²² In accordance with SEC disclosure rules, the CEO is always included among the proxy-named executives. As indicated in Table 10, the CFO was only included among the other four highest-paid officers in 79 of the 161 matched firms (49%), and the general counsel was only included in 33 of the matched firms (20%).

As shown in Table 10, the fraction of CEO bonuses based on individual performance assessments increases rather than decreases with compensation. In particular, the 81 CEOs who earned salaries and bonuses in excess of \$1 million in 1993 received an average of 36% of their bonus through discretionary payouts, while the 55 CEOs earning less than \$1 million received an average of 31% of their bonus through discretionary payouts. The same general pattern holds for CFOs and General Counsels, although these latter two groups had few executives earning above the \$1 million Section 162(m) threshold. Overall, the results in Table 10 are inconsistent with the hypothesis that discretionary bonus payouts are largely

²² We exclude survey data on group executives and business unit executives because there may be multiple such positions at a given firm, and we cannot reliably match actual compensation data from ExecuComp to the “representative” positions in the survey. When more than one executive held the position of CEO, CFO, or General Counsel in 1993, we used the executive who received the highest cash compensation in that position.

driven by tax considerations.

In order to explore further whether the results in Section 3 are driven by tax considerations, we re-estimated the results in Tables 2-6 on sub-samples of our data that are less subject to the new tax code. First, we eliminated from our sample all publicly traded companies where any executive in 1993 received cash compensation in excess of \$1 million.²³ The results from this analysis (which reduced the size of our sample by up to 84 firms, or approximately 32%) are qualitatively unchanged from those reported, although the significance levels of the results were generally lower. Second, we eliminated from our sample companies who reported making any modifications to their bonus plans to comply with Section 162(m). This analysis again results in significantly lower sample sizes (reduced by up to 88 firms, or approximately 34%), and produces qualitatively similar results at slightly lower significant levels. Finally, we eliminated from our sample only companies who made discretionary-related modifications to their bonus plans (either by eliminating discretion or introducing negative discretion). This analysis results in a modest reduction in sample size (up to 31 firms, or 12%), and substantially reduces standard errors: the results are similar in magnitude but generally more highly significant.

Overall, we interpret our results as supporting the predictions of Section 2.3 rather than being driven by tax considerations. Nonetheless, we also conclude that the tax code has affected the structure of bonus contracts, and that companies most affected by the code were far more likely to make compliance-related adjustments. This suggests that though there is little evidence that Section 162(m) affected the *level* of executive compensation (see especially Rose and Wolfram, 2002, but also Hall and Liebman, 2000, and Perry and Zenner, 2001), it did affect executives' reward structures.

²³ For Tables 5 and 6 (which analyze discretion in bonus plans by position) we eliminated CEOs, CFOs, and General Counsels earning more than \$1 million.

5. Conclusion

This paper studies the role of discretion in executive incentive contracts, and explores the costs and benefits of using subjective performance evaluation relative to objective measurement of employee performance. Drawing on the relevant theoretical literature, we derive within-firm and across-firm hypotheses regarding the use of discretion.

Using a proprietary dataset of executive bonus plans, we find evidence largely supporting our hypotheses and the theoretical literature. We show that firms use less discretion in determining CEO bonuses than the bonuses of other executives. We also show that discretionary payments based on subjective measures are more important in determining the bonuses of employees at privately held firms and relatively large public firms. In addition, the importance of discretion varies much more across firms than among different employees in the same firm and business unit managers are more likely to be paid based on their own unit's results when they work at diversified firms. Finally, we discuss and largely dismiss alternative tax-driven explanations of our results.

Prior empirical studies of the use of non-financial or individual performance measures in bonus contracts have focused largely on CEOs of publicly traded companies and have been motivated primarily by risk considerations. We considered risk, along with other distortions in objective performance measures, completeness of contracts, and other factors. We believe that our analysis, by virtue of both the variety of factors we considered and our ability to empirically measure the weight of discretion at specific positions within both private and public firms, makes a useful contribution to understanding the importance of subjective evaluation. However, limitations in our data render us unable to address conclusively several important issues at this point.

Although our analysis is based on what we believe to be the most comprehensive survey of bonus plans ever conducted, a full understanding of the use of discretion probably requires an even richer dataset including, ideally, more observations and a panel structure. A

survey designed expressly for our purposes would provide better information on the interactions within a firm, including detailed data on upstream, downstream, and horizontal relationships. Similarly, the “perfect” survey would provide meaningful information on imperfections in the subjective measure.

Though we have focused on executive bonus plans, discretion takes many forms and future research could explore how these forms act as complements or substitutes in providing incentives. Based on unreported analysis we conducted using Execucomp data and institutional features of compensation determination (see Murphy, 1999), we do not believe that firms exercise much performance-based discretion in setting base salaries. So our focus on bonus plans likely captures the vast majority of discretion in cash compensation. However, promotion decisions, job assignments, and grants of stock and stock options are also subjective decisions and, therefore, potential areas for future research on discretionary assessments of executives.

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Table 1
Bonus Pool Determination Process and Discretion in Executive Bonus Plans,
by Ownership Structure

	All Firms n=262	Publicly Traded n=195	Not Publicly Traded n=66
<i>Panel A</i>			
<i>Determination of Bonus Pool</i>			
Adjusted Sum-of-Targets	35%	30%	50%*
Formula or Schedule	35%	37%	27%
Discretionary	6%	5%	8%
Other	24%	27%	15%*
<i>Panel B.</i>			
<i>Discretion in Bonus Plans</i>			
Individual Bonuses based on "Individual Performance"	65%	62%	75%*
Discretion in Determining the Size of the Bonus Pool	42%	43%	41%
Discretion in Allocating the Bonus Pool across participants	70%	67%	80%*
Firm Has Overridden Formula and Paid Bonuses within Last 5 Years	22%	23%	20%
Firm Has Overridden Formula and Cancelled Bonuses within Last 5 Years	8%	9%	7%

Data extracted from Towers Perrin's *Annual Incentive Plan Design Survey*, 1997. "Not publicly traded" firms include 45 private firms and 21 subsidiaries of domestic or foreign publicly held firms. *-denotes that the means for publicly traded and not publicly traded firms are significantly different at the 10% level.

Table 2
Determinants of the Use of Discretion in Bonus Plans:
Logistic Regressions on the Choice of Individual Appraisals and Pool Allocations

Independent Variable	Predicted Sign	<i>Dependent Variable: =1 for Firms with Individual Performance Appraisals</i>		<i>Dependent Variable: =1 for Firms with Discretionary Allocation of Bonus Pool</i>	
		(1)	(2)	(3)	(4)
Intercept		.308	.060	.288	.136
Not Public (Dummy)	+	.584 (1.7)	2.09 (2.0)	0.672 (1.9)	1.83 (1.8)
Ln(Eligible Employees)	+	.032 (0.4)	.087 (1.0)	.085 (1.1)	.121 (1.4)
(Not Public)× Ln(Eligible Employees)	—	—	-.306 (1.7)	—	-.240 (1.3)
Finance (Dummy)	?	—	.337 (0.8)	—	.438 (1.0)
Utility (Dummy)	?	—	-.330 (0.9)	—	-.396 (1.0)
Sample Size		242	242	261	261
Log Likelihood		-155.8	-153.3	-156.4	-154.1

Data extracted from Towers Perrin's *Annual Incentive Plan Design Survey*, 1997. "Non-public" firms include 45 private firms and 21 subsidiaries of domestic or foreign publicly held firms. t-statistics in parentheses.

Table 3
Determinants of the Use of Discretion in Bonus Plans:
OLS Regressions on the Fraction of Bonus paid based on Individual Performance

Independent Variable	Predicted Sign	<i>Dependent Variable:</i> % of CEO Bonus Based on Discretion		<i>Dependent Variable:</i> % of Average Executive Bonus Based on Discretion	
		(1)	(2)	(3)	(4)
Intercept		.130	.058	.168	.102
Not Public (Dummy)	+	0.107 (1.8)	0.424 (2.4)	0.079 (1.4)	0.311 (1.9)
Ln(Eligible Employees)	+	.031 (2.3)	.045 (2.8)	.031 (2.4)	.042 (2.8)
(Not Public)× Ln(Eligible Employees)	—	—	-.065 (2.0)	—	-.048 (1.6)
Finance (Dummy)	?	—	.069 (1.0)	—	.107 (1.6)
Utility (Dummy)	?	—	-.022 (0.3)	—	-.008 (0.1)
Sample Size		233	233	242	242
R ²		.036	.058	.032	.054

Data extracted from Towers Perrin's *Annual Incentive Plan Design Survey*, 1997. "Non-public" firms include 45 private firms and 21 subsidiaries of domestic or foreign publicly held firms. t-statistics in parentheses.

Table 4
Coefficients of OLS Regressions Predicting the Fraction of Bonus Based on
Subjective Measures of Individual Performance

Independent Variable	Pred. Sign	<i>Dependent Variable: % of Bonus Based on Discretion:</i>			
		CEO		Avg. of Five Positions	
		(1)	(2)	(3)	(4)
Intercept		-.1576	-.1135	-.1432	-.1197
Ln(Market Cap)	+	.0364 (1.9)	.0366 (1.8)	.0426 (2.3)	.0420 (2.1)
Ln(Eligible Employees)	+	.0327 (2.0)	.0317 (1.9)	.0283 (1.8)	.0286 (1.8)
Market-to-Book Ratio	+	—	.0001 (0.9)	—	.0001 (1.0)
'93-'97 Sales Growth	+	—	-.3636 (-2.1)	—	-.2803 (-1.7)
Stock-Price Volatility	+	—	-.0027 (-0.0)	—	.0209 (0.2)
R ²		.057	.084	.057	.083
Sample Size		174	169	174	169

Data extracted from Towers Perrin's *Annual Incentive Plan Design Survey*, 1997. "Average of Five Positions" is the average fraction of bonus based on individual performance for the CEO, CFO, General Counsel, Group Executive, and Business Unit Executive. Market Cap is the year-end stock price multiplied by shares outstanding. Market-to-Book ratio is the average Market Cap divided by the book value of common equity. Sales Growth is the annual growth in company sales. Stock-price volatility is the standard deviation of monthly continuous compounded returns, multiplied by $\sqrt{12}$. Annual measures of Market cap, Market-to-Book, Sales Growth, and Volatility are averaged over 1993-1997. t-statistics in parentheses.

Table 5
Discretion in Bonus Plans for Five Executive Positions,
by Ownership Structure

	Percentage of Executives with Discretionary Measures in Bonus			Percentage of Bonus Determined by Discretion		
	All Firms n=262	Publicly Traded n=195	Not Public n=66	All Firms n=262	Publicly Traded n=195	Not Public n=66
	(1)	(2)	(3)	(4)	(5)	(6)
Chief Executive Officer	51%	46%	67%*	31%	28%	41%*
Chief Financial Officer	60%	57%	74%*	35%	32%	45%*
General Counsel	63%	60%	74%*	37%	35%	47%*
Group Executive	62%	58%	73%*	37%	35%	46%*
Business Unit Executive	60%	57%	72%*	35%	33%	42%

Data extracted from Towers Perrin's *Annual Incentive Plan Design Survey*, 1997. "Not public" firms include 45 private firms and 21 subsidiaries of domestic or foreign publicly held firms.

*-denotes that the means for publicly traded and not public firms are significantly different at the 10% level.

Table 6
Prevalence of Firms with No, Partial, and Fully Discretionary Bonuses
for the CEO and Other Top Executives

		Executives other than the Chief Executive Officer			Total
Chief Executive Officer	Number of Firms in Sample	No Discretion	Some Discretion	Full Discretion	
	No Discretion	82	28	5	115
	Some Discretion	0	66	1	67
	Full Discretion	0	3	45	48
	Total	82	97	51	230

Data extracted from Towers Perrin's *Annual Incentive Plan Design Survey*, 1997. Table is based on 230 sample firms that reported usable data on discretionary bonuses for the CEO and at least one other position (CFO, General Counsel, Group Executive, and Business Unit Executive).

Table 7
Coefficients of OLS and Firm Fixed-Effects Regressions of Fraction of Bonus Based
on Individual Performance Measures

Independent Variables	Pred. Sign	OLS Regressions				Firm Fixed Effects	
		(1)	(2)	(3)	(4)	(5)	(6)
Intercept		.3092	.3092	.0644	.0641	—	—
Chief Financial Officer	+	.0412 (3.1)	—	.0399 (3.0)	—	.0450 (4.2)	—
General Counsel	+	.0642 (3.8)	—	.0605 (3.5)	—	.0612 (5.5)	—
Group or Business Unit Executive	+	.0539 (3.1)	—	.0520 (3.0)	—	.0480 (5.0)	—
Non-CEO	+	—	.0530 (3.5)	—	.0508 (3.3)	—	.0504 (5.9)
Not Public (Dummy)	+	—	—	.4081 (2.4)	.4076 (2.4)	—	—
Ln(Eligible Employees)	+	—	—	.0447 (2.5)	.0448 (2.5)	—	—
(Not Public)× Ln(Elig. Employees)	—	—	—	-.0613 (1.9)	-.0612 (1.9)	—	—
R ²		.003	.003	.049	.049	.935	.934
Sample Size		1081	1081	1076	1076	1081	1081

Data extracted from Towers Perrin's *Annual Incentive Plan Design Survey*, 1997. Sample includes up to five observations for each company (for each of five reported positions). "Non-public" firms include 45 private firms and 21 subsidiaries of domestic or foreign publicly held firms. "Non-CEO" includes all executives except for the Chief Executive Officer; fixed-effects regressions include 242 firm dummy variables. t-statistics in parentheses. In columns (1)-(4), t-statistics are based on Huber/White standard errors that allow for within-firm correlation and across-firm heteroskedasticity.

Table 8
Performance Measures and Weights for Group and Business-Unit Executives

Percentage of Bonus Based on:	Number of Business Segments		Number of SIC 2-Digit Industries	
	One (n=55)	Multiple (n=74)	One (n=32)	Multiple (n=95)
Corporate Performance	46%	35%*	46%	38%
Group or Unit Performance	21%	41%*	18%	36%*
Individual Performance	32%	24%	36%	25%

Data on performance measures and weights extracted from Towers Perrin's *Annual Incentive Plan Design Survey*, 1997; data on number of business segments and industry from Compustat Business Segment files. Sample consists of 129 firms, representing the intersection of the Annual Incentive Plan and Compustat Business Segment data.

*-denotes that the means are significantly different at the 10% level.

Table 9
Adjustments to Bonus Plans to Comply with Section 162(m),
by Level of 1993 Cash Compensation of Highest-Paid Executive

1993 Cash Compensation of Highest-Paid Executive	Number of Firms	Firms Modifying Bonus Plan	Firms Adjusting Discretion in Bonus Plan
Less than \$500,000	20	10.0%	0.00%
\$500,000 to \$750,000	33	36.7%	13.3%
\$750,000 to \$1,000,000	24	47.8%	8.7%
\$1,000,000 to \$1,250,000	22	38.1%	19.1%
\$1,250,000 to \$1,500,000	19	63.2%	15.8%
Above \$1,500,000	43	72.1%	37.2%

Compensation data from Compustat's ExecuComp database. Information on bonus-plan adjustments from Towers Perrin's *Annual Incentive Plan Design Survey*, 1997. Discretionary adjustments include eliminating all discretionary components of pay, or incorporating "negative discretion" to objective-based bonuses.

Table 10
Discretion in Bonus Plans for Proxy-Named Executives in Public Firms,
by Level of 1993 Cash Compensation

1993 Cash Compensation	Chief Executive Officer		Chief Financial Officer		General Counsel	
	#	% of Bonus Discretionary	#	% of Bonus Discretionary	#	% of Bonus Discretionary
Less than \$250,000	1	10.0%	7	5.0%	5	23.0%
\$250,000 to \$500,000	21	21.8%	34	33.8%	20	41.8%
\$500,000 to \$750,000	33	34.7%	26	29.1%	7	75.0%
\$750,000 to \$1,000,000	25	34.4%	9	43.1%		
\$1,000,000 to \$1,250,000	21	34.2%	2	100.0%		
\$1,250,000 to \$1,500,000	18	32.5%				
Above \$1,500,000	42	38.2%	1	100.0%	1	100.0%

Compensation data from Compustat's ExecuComp database, titles for individual executives are matched manually. Data on discretion extracted from Towers Perrin's *Annual Incentive Plan Design Survey*, 1997.