



ELSEVIER

Journal of Financial Economics 62 (2001) 489–523

JOURNAL OF  
Financial  
ECONOMICS

www.elsevier.com/locate/econbase

## Linking pay to performance—compensation proposals in the S&P 500<sup>☆</sup>

Angela G. Morgan<sup>a</sup>, Annette B. Poulsen<sup>b,\*</sup>

<sup>a</sup> College of Business and Behavioral Science, Clemson University, Clemson, SC 29634-1323, USA

<sup>b</sup> Terry College of Business, University of Georgia, Athens, GA 30602-6253, USA

Received 29 October 1999; received in revised form 16 January 2001

---

### Abstract

We study the proposal of manager-sponsored compensation plans linking pay to performance by S&P 500 firms in the 1990s. We examine the market perception of these proposals and the characteristics of the firms that propose them. Shareholders gain at the announcement of the plans, especially when the plans are directed toward the firm's top executives. Proposing firms are those that can most benefit from the plans, given their asset type and agency considerations. Firms with more potential agency costs have the highest vote-for percentages for the plans. However, shareholders are less approving of plans with negative features such as high dilution levels. Our work suggests that stock-based compensation plans are helpful in improving managerial efforts to increase shareholder wealth. © 2001 Elsevier Science S.A. All rights reserved.

*JEL classification:* G32; G34; J33

*Keywords:* Incentives; Executive compensation; Proxy voting

---

---

<sup>☆</sup>We gratefully acknowledge the helpful comments from the referee, Shane Corwin, Kathleen Fuller, Stuart Gillan, Richard Grayson, Marc Lipson, Jeff Netter, Bill Schwert (the editor), Mike Stegemoller and Chris Stivers as well as seminar participants at the University of Georgia, University of Arkansas, Bowling Green State University, Clemson University, Creighton University, the Pennsylvania State University, Temple University and Texas Tech University. We also acknowledge assistance from Investor Responsibility Research Center.

\*Corresponding author. Tel.: 706-542-3645; fax: 706-542-9434.

*E-mail address:* apoulsen@terry.uga.edu (A.B. Poulsen).

0304-405X/01/\$ - see front matter © 2001 Elsevier Science S.A. All rights reserved.

PII: S 0 3 0 4 - 4 0 5 X ( 0 1 ) 0 0 0 8 4 - 8

## 1. Introduction

The separation of ownership and control in large corporations has a significant impact on firms' financial structure and contractual relationships. Theory argues that firms should control agency costs implicit in these relationships to maximize shareholder wealth. An often-suggested internal solution to the problem of inefficient or self-serving management is the development of compensation plans that tie managerial compensation directly to corporate performance, especially through stock-price performance. This pay-for-performance tradeoff can improve managerial performance in a more efficient way than other costly external controls, such as the takeover process. However, the difficulty of designing compensation schemes may result in relatively ineffective plans or plans that allow managers to benefit even with mediocre or poor firm performance.

We focus on proposals by managers of compensation plans that link pay to performance. We examine a large sample of announcements of compensation plans in S&P 500 firms in the 1990s. The concept of tying pay to performance has many supporters, including academic researchers, activist shareholders, investment bankers and corporate CEOs. For example, the Stern Stewart Roundtable on Management Incentive Compensation and Shareholder Value, 1992, offers diverse perspectives on compensation plans. However, the complexity of incentive contracts and the possibility that managers design them to be overly beneficial to themselves at shareholder expense suggests that they are not a cure-all for agency problems. Our work helps to determine whether managers are proposing plans that are appropriate for their firms in improving managerial efforts to increase shareholder wealth, and helps to identify plan features that are viewed negatively by shareholders.

We identify management proposals of pay-for-performance compensation schemes from proxy statements of the S&P 500 firms. From almost 2000 proxy statements mailed in 1992 through 1995, we identify 958 compensation proposals appearing on 810 proxy ballots. We look at both the market perception of these proposals and the characteristics of firms that propose them. We find positive wealth effects stemming from the announcement of the plans, especially when they target the top executives of the firm and when they replace existing plans. In addition, characteristics of proposing firms are consistent with their implementation in the firms that are most likely to benefit from them. For example, high-investment opportunity firms, where it is especially difficult to define appropriate future managerial actions, are more likely to propose pay-for-performance compensation schemes. Despite negative features in some of the plans, shareholders overwhelmingly vote for them. The votes approving the plan are positively related to the investment opportunities of the firm and inversely related to negative plan characteristics such as dilution of shareholder stakes. Overall, these results suggest that the

pay-for-performance plans help to reduce agency problems in the firm and that shareholders do evaluate and react to specific plan characteristics.

In addition, proposing firms are more likely to have had strong performance both before and after the proposal. The positive stock price reaction at the plan announcement may indicate that the introduction of these plans provides information to the market about the future profitability and cash flows of the company. Given that managers have discretion in the timing of the plans, managers may introduce these plans when they expect them to be especially beneficial. Thus, any conclusions drawn from the announcement effects on shareholder wealth should be tempered by the possibility that the announcement also signals future strong performance.

Section 2 reviews the literature and presents our research questions. We discuss our data and methodology in Section 3 and our results in Section 4. Section 5 concludes the paper.

## **2. Literature review and research questions**

Compensation provisions that reward managers for efforts that increase shareholder wealth are a partial solution to an agency problem in firms. By tying compensation to the profitability of the firm and the wealth of the shareholders, shareholders encourage managers to work harder and take appropriate risks and, in general, align managerial incentives with shareholder well-being. Baker et al. (1988) and Jensen and Murphy (1990) provide the starting point for the recent discussion of the pay-for-performance tradeoff. They analyze the relation between CEO pay and performance, based on data primarily from the 1970s. They argue that CEO pay is not very sensitive to performance, with CEOs receiving only \$3.25 for every \$1000 increase in shareholder wealth, and state that in “most publicly held companies, the compensation of top executives is virtually independent of performance”. With more recent compensation data (1980–1994) and more emphasis on the valuation of stock and stock options granted to CEOs, Hall and Liebman (1998) find a much stronger relation between firm performance and executive compensation. The authors all note, however, that it is not clear what the optimal pay/performance tradeoff should be.

The design of the optimal compensation scheme is difficult. Choosing appropriate benchmarks and methods of compensation even in a world without agency costs would be challenging. With agency costs, there are many opportunities for CEOs and other executives to ensure that their compensation is overly generous. While earlier research, such as Brickley et al. (1985) and Tehranian and Waagelein (1985), found that pay-for-compensation plans are generally good news for shareholders, later researchers have found that

managers can and do sometimes design compensation plans at the expense of shareholders (Core et al., 1999 and Campbell and Wasley, 1999).

Since the costs of designing and implementing pay-for-performance schemes vary with firm characteristics, we would expect to see patterns in their usage that emphasize where they would be most beneficial.<sup>1</sup> Smith and Watts (1992), Gaver and Gaver (1993), and Kole (1997) demonstrate that managerial compensation is more likely to include performance features if the firm has high-investment or strong growth opportunities, as measured by book-to-market ratios or variables such as research-and-development intensity. The literature also provides evidence of the importance of other agency problem considerations, such as high variability in cash flows, insider or institutional holdings, leverage, or CEO age. Lambert and Larcker (1987), for example, report that greater stock-based compensation is used when accounting measures are noisy and when the firm is in early stages of investment with rapid growth in assets and sales. Yermack (1995) also reports that pay is more sensitive to stock value in companies with noisy accounting data or in companies facing cash constraints and less sensitive in companies that are regulated. He does not verify, however, the relation between book-to-market ratios or R&D intensity and pay-for-performance compensation found in some of the earlier studies.

Our research contributes to the discussion of the role of pay-for-performance compensation plans by looking at the introduction of and revisions to these plans proposed by managers in the 1990s. Brickley et al. (1985) and Tehranian and Waagelein (1985) studied the impact on shareholder wealth of plans introduced in the 1970s and early 1980s, a time when the monitoring of corporate managers occurred mainly through outside restructuring in the form of hostile takeovers or proxy contests. Hall and Liebman (1998) have verified that the use of pay for performance has dramatically increased since the period of these earlier studies, providing many more opportunities for the use and abuse of these schemes. Our analysis focuses on this later period.

Our basic research question is to investigate whether pay-for-performance compensation plans introduced by S&P 500 firms in the 1990s are beneficial to stockholders. We approach this question in several ways. First, we consider the stock market reaction to the announcement of these plans. A positive reaction would suggest that shareholders believe that the plans help to provide managers with additional incentives to improve firm performance. A positive reaction may also reflect new information that managers expect firm performance to improve and are willing to tie their compensation to the

---

<sup>1</sup>An additional consideration in determining the cost of compensation plans is that managers may not value options granted as highly as the market (and the issuing firm) would since their portfolios are relatively undiversified. Meulbroek (2000) and Hall and Murphy (2000) consider this point further.

expected performance improvement. We consider this alternative in additional analyses as discussed below.

Because performance plans are fairly commonplace among S&P 500 firms in the 1990s, most of the proposals we identify are related to plan replacements or amendments. Therefore, any wealth effects we observe are primarily related to these decisions to continue or revise performance plans rather than their initial introduction. We assume that these incremental decisions are still of interest to shareholders and measure the wealth effects accordingly.

Second, we investigate whether pay-for-performance compensation plans are more likely to be introduced or continued in the firms where they are most beneficial, that is, in firms characterized by higher potential agency problems. If firm characteristics did not significantly influence plan adoption, it would suggest that managers are introducing the plans for reasons other than the maximization of shareholder wealth. We use regression analysis to identify firm characteristics associated with firms proposing or revising plans. We focus on characteristics such as the investment and growth opportunities and the ownership structure of the firms. Because we look at proposals of performance plans, we recognize that the non-proposing firms may already have pay-for-performance attributes in their firm. However, this possible overlap would bias against finding any differences between the proposing and non-proposing firms.

Our third area of investigation focuses on shareholder perception of stock-based compensation plans as a function of various plan and firm characteristics. While it is possible that incentive plans in general are beneficial to shareholders through the encouragement of better performance, there could be some plans that are better than others. Thus, we consider cross-sectional variation in shareholder wealth effects and shareholder voting returns. The complexity of compensation plans and the uncertainty about future payments under compensation plans may allow managers to propose plans that are too generous to themselves and that do not in fact align managerial incentives with shareholder wealth. Rappaport (1999), for example, argues that stock options awarded to managers in rising stock markets reward managers regardless of the company's performance relative to its competitors and makes a case for implementing stock options where the rewards are tied to a selected index that provides better relative information about the company's performance. Hall (2000) provides an excellent review of plan features and how to design the best plan given the characteristics of the firm.

The fact that institutional investors take negative stances on some proposals suggests that not all pay-for-performance schemes are in shareholders' interests. Institutional investors seem to be particularly opposed to plans that allow managers too much flexibility in their awards or result in excessive dilution of shareholder positions. The Stern Stewart Roundtable (1992) provides several examples of compensation schemes that simply serve to increase managerial wealth rather than building in strong incentives for

better performance. We collect dilution measures for each of the proposed plans in our study and also obtain voting recommendations for the plans from a proxy-voting advisory firm. We use these variables and measures of firm characteristics as indicators of whether the plan provisions are in shareholders interests and test for evidence that shareholders are responsive to plan specifics.

Fourth, we question whether the wealth effects related to plan announcement provide a signal about future firm performance, whether due to information effects or better managerial performance due to the increased incentives. Any positive announcement effects could result from information released with the compensation plan announcement since the announcement of a corporate event may communicate several things about the firm to shareholders. In the proxy statements and the accompanying financial statements, managers announce pay-for-performance compensation schemes that may further align their incentives with shareholder wealth. However, the introduction of the plan can allow managers to signal to the market their expectations about future share prices. Managers may be most likely to ask for stock-based compensation when they can most benefit from it, i.e., when they expect stock prices to increase. Yermack (1997), for example, specifically investigates the allocation of actual stock awards to see if they are timed to reflect insider information about expected stock prices. Thus, we are careful in interpreting our results to note that any positive wealth results may also reflect news about expected future earnings. We examine several post-performance measures including earnings, sales, and stock performance to test whether the announcement of compensation plans is followed by superior post-implementation performance.

### **3. Data and methodology**

#### *3.1. Compensation schemes*

We collect 1,997 proxy statements from the S&P 500 firms submitted to shareholders from 1992 through 1995. Throughout the period of our analysis, stock-based compensation proposals were subjected to shareholder vote to allow the recipients to be exempt from Rule 16b, also known as the “short-swing sale” rule. Section 16 of the Securities Act of 1934 requires insiders and those owning more than 10% of the corporation’s stock to disgorge any profits resulting from round-trip transactions within a six-month period. Rule 16b-3 allows an exception for purchases or sales associated with employee benefit plans, including stock option plans, if the shareholders of the corporation have approved the plan. In addition, the NYSE, American Stock Exchange and

NASDAQ Stock Market rules require shareholder approval of stock option plans and many state corporation laws have similar requirements.<sup>2</sup>

We identify 958 stock-based compensation proposals submitted by management on 810 different proxy ballots. In some cases, multiple compensation proposals appear on a single ballot; ballots have as many as eight compensation proposals but usually we observe only a single such proposal per ballot. The proposed plans vary on several dimensions, including the securities affected, the plan beneficiaries and the specific features of the plan. Table 1 provides a summary of the plans, categorizing the plans on the basis of the type of compensation received and the recipients of the compensation. Table 2 provides a breakout of the frequency of the different plan characteristics.

Managerial compensation is tied to performance through several possible types of security allocations. As reported in Table 1, top management or executives of the firm may benefit from stock option plans, restricted stock plans, performance plans or omnibus plans (panel A). In stock option plans, managers receive option allocations that vest gradually over several years, starting generally a year after the options are received. The exercise price of the options is generally set as the market price or “fair market value” at the time of allocation. In restricted stock plans, managers receive an allocation of shares that have restrictions with respect to when the shares can be sold or transferred; these plans usually require that the managers hold the shares for several years and that the awards be forfeited if the managers leave the firm. Either stock option or restricted stock plans may also use stock appreciation rights to replace or supplement the other security.

Performance plans and omnibus plans are two other common types of compensation plans that are normally used for executive participants. Performance plans are more likely to tie managerial compensation to performance through accounting measures of profitability. Rewards for greater earnings or profitability may be made through stock allocations or cash rewards.<sup>3</sup> We exclude performance plans that provide only cash compensation. Omnibus plans, as the name suggests, are plans that relate compensation to

---

<sup>2</sup> See Wagner and Wagner (1997) for a complete discussion of the law pertaining to voting on compensation proposals. In 1996 (after the period of our analysis), the SEC removed the requirement of shareholder approval for exemption from Section 16 for stock-based compensation, as long as the board of directors or a committee of the board approved the plan. See Practising Law Institute (1997, p. 362), for additional details.

<sup>3</sup> Performance plans that provide cash compensation are subject to IRS Rule 162 (m). In 1993, the IRS enacted this change to the Internal Revenue Code of 1986 requiring that compensation in excess of \$1 million paid to the top five executives of the firm must be approved by shareholders for the compensation to be tax deductible. In addition, the plans must tie compensation to performance.

Table 1  
Common classification types and descriptions of compensation plans

Plan classification	Securities affected	Participant type(s)	Comments
<i>Panel A: Plans covering executives</i>			
Stock option plan	Stock options, stock appreciation rights (SARs)	Executives	Exercise price is normally set as the fair market value of the stock on the time of allocation.
Restricted stock plan	Restricted stock, (SARs)	Executives	Stock is restricted with respect to when the stock can be sold or transferred. Stock may be forfeited if the manager leaves the firm.
Omnibus plan	Three or more of the following security types: stock options, SARs, restricted stock, stock, performance shares, performance units, dividend equivalents	Executives; NDIR may sometimes be included under the Executive plan	Executive compensation may be paid using three or more possible securities types.
Performance plan	Performance units which are normally paid in cash or stock	Executives	Executive compensation may be paid using one or two possible security types.
Performance-based cash compensation plan	Cash, stock units, performance units	Executives, usually only the CEO or top five executives	Under Section 162(m), the IRS requires that compensation in excess of \$1 m to be paid to the top five executives must be approved by the shareholders in order to be tax-deductible. These plans must tie compensation to performance.
<i>Panel B: Plans covering nonemployee directors or employees</i>			
Nonemployee directors (NDIR) stock ownership plan	Stock options, restricted stock	NDIR	NDIR receive annual grants of stock options or stock or NDIR may purchase restricted stock at a discount.
Nonemployee directors stock for retainer plan	Stock options, restricted stock	NDIR	NDIR receive a portion of their retainer or other fees in the form of stock or stock options.
Deferred compensation plan	Restricted stock, other investment opportunities	Executives or NDIR	Executives or NDIR can defer a portion of their cash compensation into a set of investment vehicles, one of which is normally stock.
Employee stock ownership plan	Stock	Employees	Employees may purchase stock at a discount (usually 85% of the price) during specified offering periods.



Table 2

Management-sponsored compensation-related proposals partitioned by plan beneficiary, proposal type, timing of proposal, and frequency of proposal of compensation plans

Distribution by plan beneficiary, plan type, timing of proposal and frequency for management-sponsored compensation proposals appearing on 810 S&P 500 firm ballots from 1992 to 1995. The sample consists of 958 proposals. Multiple proposals on a single ballot are considered separately for this table.

	Number
<i>Panel A: Plan beneficiary</i>	
Executive	633
Nonemployee director	208
Employee	117
<i>Panel B: Plan type</i>	
Stock option plan	179
Restricted stock plan	29
Omnibus stock plan	334
Performance plan	14
NDIR stock plan	159
NDIR stock for retainer plan	32
Deferred compensation plan	36
Employee stock ownership plan	115
Other compensation plans	60
<i>Panel C: Plan timing</i>	
Replacement plan	278
Additional plan	140
Amend existing plan	402
New plan	138
<i>Panel D: Number of years plans were proposed</i>	
	Number of firms
None	87
One year	221
Two years	152
Three years	47
Four years	0

performance via more than one security type—including but not limited to stock options, stock appreciation rights, restricted stock or performance units.

Compensation schemes relating compensation to performance may also cover other participants in the firm (panel B). Shareholders are asked to approve stock ownership plans for nonemployee directors, where the nonemployee directors may receive compensation through stock options, stock, or restricted stock allocations. Deferred compensation plans allow nonemployee directors or executives of the firm to defer a portion of their cash compensation into other investment vehicles, including stock of the company.

Shareholders also vote on the establishment of employee stock ownership plans, which allow all or most employees to purchase the stock of the company, usually at a discount during specified offering periods. The majority of employee plans allow employees to purchase stock at 85% of the fair market value.

The bulk of the plans in our sample (633 of 958) include the executives or top managers of the firm as beneficiaries (Table 2, panel A). Nonemployee directors are included in 208 plans and employees are covered in 117 plans. Some plans may cover more than one participant type. For example, it is not uncommon to see omnibus stock plans that provide one list of securities that may be granted to officers and a different list (usually non-qualified stock options or restricted stock) that may be granted to nonemployee directors. Omnibus plans covering both executives and nonemployee directors are classified as executive plans for this study. The bulk of the plans in our sample are omnibus plans (panel B, 334 plans, 34.8% of the full sample), with 18.7% ( $n = 179$ ) of the additional compensation plans being stock option plans and 2.3% ( $n = 29$ ) being restricted stock plans. Nonemployee director plans and employee stock ownership plans are 19.8% ( $n = 190$ ) and 12.0% ( $n = 115$ ), respectively, of our sample.

Compensation resolutions may replace an existing plan, add a plan, amend an existing plan or propose a new plan (panel C). Plans typically have a ten-year duration, requiring replacement at the end of that period. Plans may also be replaced if they run low on allotted shares for distribution. We identify 278 replacement plans. We have 140 proposals that add a new compensation plan to existing plans and 402 proposals that amend existing plans to increase the number of shares covered under the plan, extend the term of the plan, increase the amount of grants provided to nonemployee directors or limit the amount of awards which can be provided annually to an individual. We identify 138 plans that seem to be totally new to the firm.

Table 2 (panel D) also reports the frequency with which the firms in our sample proposed compensation plans. Most of the firms in the sample proposed compensation plans in one (221) or two (152) years of our sample period. Eighty-seven firms never proposed compensation plans during this four-year period, while 47 proposed plans in three different years.

All stock-based compensation plans are not equally beneficial to shareholders. There exists the opportunity for abuse in these plans, and institutional investors have incentives to spend significant time evaluating specific features of compensation plans and to develop standard voting policies with respect to plan provisions. Of particular concern to shareholders and governance activists is the dilution of the outstanding common stock by the issuance of more common stock as a result of the exercise of the stock options. Dilution can affect the share of the profits returned to the shareholders if shares are purchased at the lower exercise price rather than the market price or if newly invested funds are not as profitable as the existing capital in the firm. In

addition, the relative voting strength of existing shareholders is diluted when new shares are issued. In the case of stock-based compensation, the dilution of the voting rights has a dual impact since the additional shares issued lower the voting strength of the typical shareholder while at the same time the allocation of the shares to management or nonemployee directors results in more concentrated voting for insiders. We use dilution as a measure of the quality of the plan, with the assumption that overly dilutive plans are detrimental to shareholders.<sup>4</sup>

Table 3 reports dilution statistics for the proposed compensation plans in our sample, focusing on the 810 top management and nonexecutive compensation plans with available data. Dilution is measured as the ratio of the proposed increase in the number of shares outstanding resulting from the proposal to the outstanding number of shares. Average dilution for the full sample is 3.21% (median = 2.35%). However, 23% of the sample has dilution greater than 5% of the outstanding shares. In examining dilution statistics for several subsamples, we find that the greatest dilution occurs in the executive compensation proposals (with more than 29.4% of the 623 plans resulting in greater than 5% dilution) and in those plans that replace existing plans (42.6% of the plans resulting in greater than 5% dilution). We note that 217 of the 235 (or 92%) of the replacement plans are executive compensation plans, emphasizing that the greatest dilution occurs in the executive category. We rarely observe more than 5% dilution in the nonemployee director plans, with only 1.6% of the observations falling in that category. Bethel and Gillan (2000) present data that suggest that managers try to cap dilution at less than 5% to prevent negative reactions to proposed stock-based compensation plans. We see somewhat similar patterns in our data, with more than 25% of the executive plans falling in the 3–5% dilution range, compared to only 15% in the 1–3% range. However, more than 29% of the executive plans have 5% or more dilution.

We also gather voting recommendations from an outside proxy-voting advisory firm that provided these recommendations to institutional clients on a fee basis.<sup>5</sup> The recommendations were provided to us on a confidential basis.

---

<sup>4</sup>TIAA-CREF, an important institutional investor that has taken a watchdog position on many corporate governance provisions, states, “Shareholder interests are vitally affected by stock-based compensation plans. Inherently, they provide the greatest opportunities for incentives, and for abuse.” TIAA-CREF has developed guidelines specifically for executive compensation in their Policy Statement on Corporate Governance. One of the key considerations with respect to stock-based awards is the potential dilution from the plan, with TIAA-CREF raising a red flag if the plan allows more than 15% dilution over the duration of the plan or 2% in any one year. Other red flags include reload options, evergreen plans, or options that allow repricing when the market price of the stock has declined below the original exercise. (TIAA-CREF, 2000.)

<sup>5</sup>While some voting advisory firms also provide their recommendations to the managers sponsoring the proposals for a fee, this firm did not.

Table 3

Dilution resulting from proposed stock-based compensation plans by plan characteristics

Dilution statistics for compensation plans, by beneficiary, timing of plan, and vote recommendation. Dilution is measured as the ratio of the proposed increase in number of shares outstanding to the existing shares outstanding, obtained from the proxy statement detailing the plan. Employee plans ( $n = 117$ ) and plans for which we could not determine dilution ( $n = 31$ ) are excluded.

Sample	Average dilution (%)	Median dilution (%)	% of sample with greater than 5% dilution
Full sample ( $n = 810$ )	3.21	2.35	23.0
Executive ( $n = 623$ )	4.07	3.6	29.4
Nonemployee directors ( $n = 187$ )	0.35	0.1	1.6
Replacing existing plans (235)	5.50	4.80	42.6
Additional plans ( $n = 118$ )	3.56	3.05	26.3
Amending existing plans ( $n = 340$ )	2.43	1.15	15.3
New plan types ( $n = 117$ )	0.51	0.20	2.6
Positive vote recommendations ( $n = 474$ )	2.39	1.35	14.6
Negative vote recommendation ( $n = 206$ )	4.81	4.0	40.3

The prudent-man laws require that pension funds and mutual funds vote their proxies in the best interests of fundholders. Proxy advisory firms assist their institutional clients by providing detailed analyses and voting recommendations to satisfy the clients' fiduciary responsibilities and by coordinating the voting of proxies for stocks held by the clients. Several of these proxy advisory firms exist, so institutional clients and voting recommendations may differ across these consulting firms. We use these recommendations as an additional proxy for the quality of underlying plan provisions.

The advisory firm recommended negative votes on 225 of the proposals included in our sample. The analysis of compensation plans by the advisory firm followed a detailed process. Some provisions warranted an automatic negative voting recommendation while other provisions were viewed as marginally detrimental. The advisory firm evaluated the plans based on whether the positive plan provisions outweighed the negative; thus, a marginally harmful provision, such as excessive change-in-control provisions, may not result in a negative voting recommendation if the combination of all plan provisions is considered beneficial to shareholders.

Table 4 lists the most common reasons provided for recommending a negative vote. These rationales provide insights into characteristics of plans that may not be beneficial to shareholders. The most commonly cited rationale for a negative vote recommendation is the presence of an evergreen provision, which sets the shares covered under the plan as a fraction of all outstanding shares, allowing the plan to replenish itself (48 plans). Other unsatisfactory

characteristics in these compensation schemes include overly dilutive plans that would result in significantly reduced shareholder stakes when the options are exercised (47 plans), exercise periods that extend too long past employment with the firm (32 plans), gun-jumping grants (asking for retroactive approval of option grants, 24 plans) and repricing provisions (21 plans). Plans with low exercise prices, high rewards, or terms that are too flexible and plans that reward managers of firms with prior poor performance also result in negative voting recommendations.

Table 3 included dilution statistics on the basis of whether the proposal received a positive or negative vote recommendation. These data verify the correlation between dilution statistics and vote recommendations from the proxy advisory firm. The 206 plans receiving negative vote recommendations had an average 4.81% dilution (median = 4.0%), with 40.3% greater than 5%. In the positive vote recommendation category, average dilution was 2.39% (median = 1.35%) and 14.6% had greater than 5% dilution.

In addition to gathering voting recommendations on 803 of the 958 compensation proposals from the advisory company, we collect the actual voting record on 793 of the proposals from the Investor Responsibility Research Center (IRRC). The voting records for the various proposals are reported as the percentage of votes cast for an item based upon the proxies actually voted. While shareholders approved all of the proposals, there is substantial variation in the voting records.

### 3.2. *Methods of analysis*

We use event-study analysis to determine that the stock market reacts positively to plan announcements. We report three-day abnormal returns averaged across the announcements centered on the mailing date of the proxy and the corresponding meeting date. This analysis provides information about the market perspective of the plans. While it is true that the plans theoretically serve to align incentives, the fact that management proposes them allows for the possibility that they may be too beneficial to managers or insensitive to firm performance.<sup>6</sup> Jarrell and Poulsen (1987), and Jarrell et al. (1988) find that management proposals

---

<sup>6</sup>The compensation committee of the board of directors normally proposes compensation plans. However, in many cases the compensation plan is developed by management itself or by compensation consultants and the compensation committee simply approves their proposal. Most observers would also argue that these committees are not independent from management [see, for example, Core et al. (1999)]. In fact, some companies in our sample had insiders sitting on the compensation committee, generally in a nonvoting role. Boards of directors are often more likely to side with management than with a diverse shareholder base with which they have infrequent contact.

Table 4  
Reasons provided for negative voting recommendations

Description and frequency of common reasons provided for no-vote recommendations on compensation proposals by a proxy voting consulting firm. More than one rationale may be provided for a no-vote recommendation. Thus, the total number of reasons exceeds the 225 proposals for which a negative voting recommendation was issued.

Reason	Explanation	Number
Evergreen provision	Self-replenishing plan; shares covered under the plan are set annually as a percentage of shares outstanding	48
Plan is too dilutive	Shares covered under the plan are a significant portion of total shares outstanding; exercise of options could significantly reduce shareholder stakes	47
Extend exercise period on options or set offering period on employee plan too long	Exercise periods should be less than three years after retirement/termination; offering periods on employee plans should be less than 12 months	32
Gun-jumping grants	Shares or options are granted to executives or NDIRs contingent on shareholder approval	24
Options granted at less than fair market value	Stock options should be granted at the fair market value of the stock on the day of the grant; otherwise, a compensation gain is realized equal to the difference between the grant price and the fair market value	23
Repricing or reload provision on options	Allows board or committee to reset exercise price on options when stock price declines; harmful to shareholders who cannot reset their own exercise prices	21
Poor prior compensation performance	Too many grants have been authorized in the past; bonuses have been paid although financial performance was poor, etc.	19
Current compensation is already too high	Current compensation is already higher than that of peer group; additional compensation would widen the gap	17
No performance criteria and/or benchmark provided	Seeks “blank-check” shareholder approval on performance-based plans	16
Bundled proposals or amendments	Several items are included under one proposal; items which are beneficial to shareholders are normally combined with those that are detrimental in order to try to win shareholder approval	14
Lack of information	Adequate information was not provided to evaluate the plan	13
Awards or compensation are too high under the plan	Possible compensation is too high under the plan; example: maximum allowable awards under the plan are more than five times that actually awarded in the past year	12
Similar plan already in place	Proposed compensation plan would overlap with another plan already in place	11
Excessive change-in-control provisions	Change in control of firm results in changes in compensation such as immediate vesting of options	11

Table 4 (continued)

Reason	Explanation	Number
Poor prior financial performance	Stock performance or earnings have been less than peer group	10
All plans combined are too dilutive	Several plans may be in place; the total of the shares covered under the plans is a significant portion of total shares outstanding	9
Replace several different plans with one plan	Usually combines plans covering different security types under one plan; shareholders would rather monitor different security grants separately	8
Poor performance criteria	Formulas are poorly structured or grant too much board authority or several possible financial criteria are provided; almost assures that management will achieve at least one goal and will be awarded their bonuses	6
Firm has no performance-based plans in place	Compensation for all plans is not tied to performance	4
Add different security type to existing plan	Shareholders would prefer that different securities be allocated under separate plans; separate allocation makes overseeing easier; example: stock options are viewed as better incentive methods than restricted stock	3
Other	Examples: increase in shares is requested for store managers while actual grants have been to top executives; plans offers stock depreciation rights—pay off when stock price declines	26

may have a negative impact on shareholder wealth even though shareholders vote for their adoption.<sup>7</sup>

While 810 proxies contain one or more compensation proposals, we limit our analysis of the wealth effects to the 573 firms where the compensation proposal is the only nonstandard item on the ballot. Items appearing annually on proxy ballots such as proposals to re-elect the board or to re-appoint auditors are considered standard resolutions while all other proposal types are classified as nonstandard. This smaller sample does not significantly affect our results. In addition to the compensation proposals and other items on which shareholders are asked to vote, proxy statements contain extensive information about the firm and its governance and performance. Thus, it is difficult to interpret both mailing date and meeting date wealth effects as resulting from any specific proposal on the ballot. The results presented here, however, provide some evidence on shareholder views of these plans with the caveat that there may be other considerations coming into play.

<sup>7</sup>Several authors have recently developed analyses of appropriate design of compensation. See, for example, Hall (2000) and Hall and Murphy (2000).

We first consider the shareholder wealth effects of the compensation plans. For the full sample of 573 proxy announcements for which we have data, we find a positive wealth effect at the mailing date (cumulative abnormal return or CAR = 0.38%,  $t = 2.45$ ) and at the meeting date (CAR = 0.34%,  $t = 2.24$ ). We also consider several subgroups of plans to see if the plan beneficiary or the timing of the plan significantly affects the market reaction.

Second, we use logistic regressions to test for firm characteristics that are associated with the proposal of pay-for-performance compensation plans. We include several variables in the regressions to measure the importance of agency considerations, including book-to-market ratios, firm size, insider holdings and institutional holdings. We also test several variables measuring preceding-year share price and accounting performance that may help distinguish the importance of timing and signaling of performance in the introduction of these plans. We expect that if the plans were beneficial to shareholders, their introduction or revision would be systematically related to firm characteristics that proxy for agency considerations.

Third, we consider whether cross-sectional variation in the compensation plans and the proposing firms affect the market reaction to the plans and shareholder vote-for percentages on the plans. Presumably shareholder approval of the plans, whether measured through the wealth effect or the vote-for percentage, will increase the more beneficial the plan is thought to be. Plan-specific variables, such as whether the proposal received a negative vote recommendation and the dilution resulting from the proposal, are included in this analysis. In addition, we consider similar explanatory variables to those used in the logistic regressions.

Last, we look at firm performance before and after the announcement of the stock-based compensation plan. We examine several performance variables, including stock performance, earnings, sales, and growth in assets and sales. Performance is evaluated by comparing pre- and post-performance results for the subset sponsoring compensation against the set of firms without these proposals, and by comparing same-firm pre- and post-performance results for the firms sponsoring compensation-related resolutions.

## **4. Results of analysis of performance compensation**

### *4.1. Wealth effects*

Table 5 reports the results from our event study analysis for several categories of compensation plans. We report the wealth effects based on three-day (–1 to +1) windows around the mailing date of the proxy materials and the date of the annual meeting. We estimate wealth effects using standard market methodology, as developed in Brown and Warner (1980, 1985). We



Table 5  
Wealth effects of the announcement of management-sponsored compensation proposals by participant type and by timing of the compensation plan

Cumulative average abnormal stock returns for S&P 500 firms with management-initiated compensation proposals from 1992 to 1995. In each panel, column 1 reports the type of item proposed. In column 2, the event window is centered on the mail date. In column 3, the event window is centered on the meeting date. We include the category of mixed proposals for ballots that include resolutions covering more than one participant type or timing of proposal. Results shown are for the day  $-1$  to day  $+1$  event window,  $t$ -statistics are in parentheses. The percentage of abnormal returns greater than zero is in brackets.

	Mailing date	Meeting date
<i>Panel A: Plan beneficiary</i>		
Executive ( $n = 330$ )	0.52 (2.58) [53.3]	0.30 (1.50) [52.1]
Nonemployee directors ( $n = 87$ )	0.15 (0.41) [51.7]	0.59 (1.58) [60.9]
Employees ( $n = 43$ )	0.02 ( $-0.76$ ) [55.8]	1.31 (2.03) [51.2]
Mixed sample ( $n = 113$ )	0.00293 (0.81) [61.1]	$-0.0006$ ( $-0.161$ ) [51.3]
<i>Panel B: Timing of the plan</i>		
Replacement plan ( $n = 145$ )	0.77 (2.64) [59.3]	0.66 (2.22) [54.5]
Additional plans ( $n = 61$ )	0.48 (1.03) [52.5]	0.77 (1.66) [65.6]
Amend existing plan ( $n = 209$ )	0.16 (0.59) [50.7]	0.03 (0.12) [48.3]
New plan ( $n = 56$ )	0.63 (1.34) [51.8]	0.06 (0.12) [55.4]
Mixed plan ( $n = 102$ )	0.04 (0.10) [61.1]	0.46 (1.17) [53.7]

estimate the relation between the stock return and the market for 100 days beginning 105 days prior to the mailing date. The estimated relation is used to measure abnormal returns in the event window. The  $t$ -statistics are computed

from the standard error of the estimation period. We differentiate the wealth effects based on the beneficiaries of the compensation package and on the timing of the plan, i.e., the plan is a replacement plan, amends or adds to an existing plan or is a new plan.

There are 330 ballots that contain proposals benefiting only executives or top management, 87 that benefit nonemployee directors, and 43 that benefit employees. In addition, 113 ballots contain proposals where the proposals viewed jointly benefit more than one group. The proxy mailing dates of proposals that target executives of the firm are associated with significant increases in shareholder wealth, averaging 0.52% (53.3% of the CARs are positive). The other classifications are associated with CARs that are insignificantly different from zero on the mailing date, with the employee plans significantly positive on the meeting date. (We discuss the meeting-date wealth effects further at the end of this section.) Given that top managers have the most direct impact on firm activities, it is not surprising that the significant wealth effects are concentrated in the executive compensation proposals. These CARs support the premise that, on average, the compensation schemes are viewed positively. These results are consistent with the plans helping to further align managerial incentives with shareholder wealth or that the plans provide good news about future firm performance.

An important differentiation to make in our sample is to consider whether the compensation resolutions propose a new plan or are simply an amendment to or renewal of an existing plan. We identify 145 ballots with plans that replace existing plans as they expire or as the number of unused shares under the plans becomes low, 61 ballots that supplement existing plans, 209 ballots that amend existing plans and 56 ballots introducing new compensation plans in firms that previously did not have performance compensation plans (to the extent that we are able to identify existing plans). The replacement plans are associated with significantly positive CARs, 0.77% at the mailing date and 0.66% at the meeting date. However, 124 of the 145 replacement plans are also executive compensation plans, suggesting that the impact of the timing of the plan on the wealth change is intertwined with the impact of the beneficiary of the plan. The remaining categories are insignificantly different from zero.

The wealth effect associated with a proposal should reflect the marginal impact of the plan. Thus, it is interesting to note that we find the largest wealth effect associated with the replacement plans rather than the new plans, leading us to believe that shareholders view favorably the continuation of, or changes to, existing plans that primarily benefit executives. The new plan category on the other hand, with insignificant wealth effects, consists primarily of non-director compensation plans (45 of 56). We further consider cross-sectional variation in the CARs related to plan and firm characteristics in Section 4.3 below.

In the wealth effect analysis, we focus on the mailing date of the proxy statement, representing the date the shareholders are officially notified of the plan, and the meeting date, representing the date at which the decision on the proposal is announced. It is difficult, of course, to identify the exact date at which the information regarding the compensation plan is incorporated into market information. There are many potential dates that could be relevant to the release of information about these stock-based compensation plans. The meeting dates for the compensation committee or the boards of directors are also important decision points with respect to these plans. However, given the difficulty in identifying these dates across the sample and determining the nature of any disclosures resulting from these meetings, we rely on presenting the wealth effects based on the mailing date and the meeting date.

There may be news contained in all proxy mailings or meeting dates and thus we need to ensure that any significant wealth effects that we find are not simply characteristic of all proxy announcements. Brickley (1986) finds insignificant abnormal returns around the proxy mailing date for 500 randomly selected proxy statements and for a subsample of 274 observations with only standard events within the 500 proxies. We also confirm that the proxy statements in our sample with only standard items experience abnormal returns insignificantly different from zero on the mailing date.

Brickley notes, however, that the announcement effects at the meeting dates are more problematic. He finds significantly positive returns at the meeting date for both his full sample and the clean subsample. We also find significantly positive wealth effects at the meeting date for our sample of compensation proposals and the sample relating to no-compensation proposal on the ballot. In examining news stories for the non-proposing S&P 500 firms at the meeting dates, we find a large number of earnings, restructuring and other news announcements occurring on the meeting date. Brickley suggests that the positive wealth effects at the meeting date may result from predictable increases in risk and expected returns around known information-producing events. Thus, we are less confident in relying on the meeting-date announcement effects as information regarding the quality of the compensation proposals and do not rely on these results in our paper.

#### *4.2. Firm characteristics*

We next consider differences between proposing and non-proposing firms based on characteristics such as ownership, firm size, growth opportunities and firm performance. If performance-based compensation plans were beneficial to shareholders in that they help to align incentives, we would expect the plans to be significantly related to firm characteristics that measure agency considerations. Alternatively, if we do not find significant relations between these firm characteristics and pay-for-performance compensation plans, it suggests the

importance of other considerations, such as managers adopting plans that benefit themselves regardless of the impact on shareholders.

Table 6 reports means and medians of various firm characteristics and Table 7 reports the results of logistic regressions examining the relation between the characteristics and the probability of receiving a compensation proposal. A problem with this analysis is that the different S&P 500 firms may have stock-based compensation proposals in one year of our sample, while they have none in a different year. Thus, it is difficult to distinguish specific characteristics that might lead to the proposal of these plans. Due to the high correlation over time for most of the independent variables, we expect that this

Table 6  
Descriptive statistics for S&P 500 firms without and with management-sponsored compensation resolutions in 1995

Mean and median (in parentheses) summary statistics for the S&P 500 firms differentiated by whether a management-sponsored compensation-related proposal is included on the ballot in 1995. Officers and directors' holdings, including shares held by family members and related firms, are recorded as those reported on the proxy corresponding to the meeting date. Institutional shares are recorded as those reported in Spectrum 3 for December 1994. Book value of total assets, market capitalization, book-to-market ratio, leverage, earnings, and preceding year sales growth are found using the COMPUSTAT tapes for 1994. Book value of total assets and market capitalization are expressed in millions. Prior one-year stock performance is found by comparing the buy and hold stock returns of the firm to that of a control firm following Barber and Lyons (1997).

	No compensation proposal from 1992 to 1995 ( <i>n</i> = 74)	No compensation proposal in 1995 ( <i>n</i> = 290)	Compensation proposal in 1995 ( <i>n</i> = 205)
Officers' and directors' holdings	0.0923 (0.0200)	0.0782 (0.0210)	0.0936 (0.0282)
Institutional holdings	0.5386 (0.5550)	0.5820 (0.6100)	0.5950 (0.600)
Total assets	14398.11 (5813.40)	17010.16 (5391.22)	13743.81 (3770.91)
Market capitalization	6617.96 (3972.85)	6202.36 (3827.81)	6074.92 (3362.52)
Book-to-market ratio	0.5566 (0.6010)	0.5408 (0.5070)	0.4595 (0.4250)
Leverage	0.5352 (0.5270)	0.7205 (0.512)	0.7751 (0.4400)
Prior one-year stock performance	-0.0471 (-0.0295)	-0.0119 (-0.0150)	0.0616 (0.0460)
Prior one-year sales growth	0.0615 (0.0465)	0.0841 (0.0670)	0.1138 (0.0900)

Table 7

Firm characteristics related to the submission of stock-based compensation resolutions

Results of logistic regressions examining the relation between firm-specific characteristics and the probability that the firm received a stock-based compensation-related proposal. The first regression examines executive and nonexecutive director compensation proposals and sets the dependent variable to one if such a proposal appears on the ballot ( $n = 634$ ) and to zero otherwise ( $n = 1254$ ). Regression two focuses on executive compensation proposals only and sets the dependent variable to one if a resolution occurs ( $n = 439$ ) and to zero otherwise ( $n = 1254$ ).

Officers' and directors' holdings, including shares held by family members and related firms, are as reported on the proxy corresponding to the meeting date. Institutional shares are as reported in Spectrum 3 for December year-end prior to the meeting date. Firm size is measured as the natural logarithm of the book value of total assets. Assets, book-to-market ratio, leverage, and preceding year sales growth are found with COMPUSTAT data. Prior one-year stock performance is found by comparing the buy and hold stock returns of the firm to that of a control firm following Barber and Lyons (1997). *P*-values are in parentheses below the estimated coefficients.

	(1)	(2)
Intercept	-0.6538 (0.1051)	-1.0739 (0.0184)
Officers' and directors' holdings	0.2037 (0.5664)	0.3457 (0.3783)
Institutional holdings	0.9822 (0.0046)	0.8527 (0.0311)
Firm size	-0.0528 (0.1574)	-0.0417 (0.3237)
Book-to-market ratio	-0.3344 (0.0429)	-0.2925 (0.1164)
Leverage	-0.0153 (0.3142)	-0.0158 (0.3386)
Prior one-year stock performance	0.3590 (0.0017)	0.3189 (0.0159)
Prior one-year sales growth	0.0814 (0.5043)	0.1195 (0.3407)
Likelihood ratio test statistic ( <i>P</i> -value)	33.261 (0.0001)	22.342 (0.0022)

would weaken the ability of the logistic analysis to identify distinguishing features of firms that lead to the introduction of a plan in a given year. In the results presented in Table 6, we report averages and medians of the financial and performance variables at their levels for year-end 1994. Each observation in the logistic regression (Table 7), however, is based on data corresponding to the year-end prior to the corresponding proxy filing.

There are 1888 proxy observations with the necessary data to estimate the logistic regressions where the dependent variable is one if the firm proposed a

stock-based compensation proposal on a specific proxy statement and zero otherwise. Executive or nonemployee director proposals appear on 634 of the ballots. We include the ballots with other nonstandard items in the reported regressions, explaining the increase in the number of compensation proposals relative to the wealth-effect estimates. There were no significant differences when they were excluded. Regression one contains executive and nonexecutive director compensation-related resolutions; regression two excludes nonemployee director proposals (number of executive compensation plan proposals = 439). We do not consider plans with employee beneficiaries in the analysis due to the small number of plans and the insignificant announcement effects related to them.

We consider three general categories of firm characteristics that might be important in determining whether the company would introduce a performance compensation plan: governance characteristics, financial variables, and recent firm performance. Core et al. (1999) find evidence of the importance of the governance structure. In their examination of compensation plans in place, they find that the greater the agency problems within the firm, the greater the level of executive compensation. Our measure of officer and directors' holdings is gathered from the relevant proxy statement and is recorded as the percentage of total voting power held; affiliated familial or corporate holdings are included in these numbers. The average level of officer and directors' holdings is 9.4% (median = 2.8%) in the 1995 proposing firms and 7.8% (median = 2.1%) in the 1995 non-proposing firms. Institutional ownership, measured as the percent held according to the December volume of *Spectrum* 3 for the year preceding the meeting date, averages close to 60% at year-end 1994 for both the proposers and the non-proposers.

The logistic regressions (Table 7) provide evidence supporting the importance of the alignment of managerial incentives with the adoption of compensation plans. The probability of proposing compensation plans increases significantly with higher institutional holdings, while insider ownership has an insignificant impact on proposal probability. The positive coefficient on institutional holdings and the insignificance of the measures of insider control suggest that the compensation schemes are consistent with shareholder wealth maximization in that insiders are not able to impose these plans without support from institutions. Since institutional shareholders are more active than typical shareholders, the greater presence of these parties for the subset sponsoring compensation plans is consistent with the premise that pay-for-performance compensation plans help to align managerial incentives. Also, it does not seem that insiders with relatively higher stakes in the firm are able to implement the compensation schemes more easily than other management teams. (Kole, 1997, also found no significant difference in insider ownership among firms with and without stock-based compensation plans.)

We examine the relation between several variables that describe the financial characteristics of the firm, including total assets, the book-to-market ratio of the firm, and the firm's leverage, and the proposal of stock-based compensation plans. Firm size, whether measured as total assets or market capitalization of the firm, is large, as we are focusing on the S&P 500. The average value of assets for the proposing sample is \$13.7 billion (median = \$3.8 billion) and market capitalization averages \$6.1 billion (median = \$3.4 billion) based on year-end 1994 data. The non-proposers are similar; average value of assets is \$17.0 billion and average market capitalization is \$6.2 billion. Firm size, measured as the logarithm of total assets, is not a significant explanatory variable in the logistic regressions (nor is market capitalization, as determined in regressions not included here). Kole (1997) notes that large firms are more likely to "pioneer" innovative compensation schemes. She also finds, however, little evidence that firm size significantly impacts the use of pay-for-performance plans. The lack of significance for firm size in determining plan introduction in our sample may suggest that pay-for-performance is no longer an innovative firm characteristic.

Leverage of the firms, defined as the book value of debt over the book value of equity, is not a significant explanatory variable in the logistic regression. Yermack (1995) suggests that leverage can serve as a measure of agency costs of adopting firms in that debt holders may prefer to weaken the link between managerial wealth and share price to protect their own position. He also finds no significant difference across firms, however.

The book-to-market ratio of the firm is used to measure the growth opportunities of the firm. The lower this ratio, the more growth or investment opportunities the firm has, and the more the firm may benefit from compensation schemes that tie compensation to performance. Such schemes provide managers with additional incentives in firms where such incentives are especially valuable. While Yermack (1995) did not find that pay sensitivity was higher in firms with lower book-to-market ratios, Smith and Watts (1992), Gaver and Gaver (1993), and Kole (1997) do find that firms with greater growth opportunities are more likely to have stock option plans or other performance-based compensation schemes. The average (median) book-to-market ratio for firms in our sample is 0.46 (0.42) based on year-end 1994 data for firms proposing in 1995 and 0.54 (0.50) for those not proposing stock-based compensation plans in 1995. In the regression analysis, we find significantly lower book-to-market ratios for adopting firms, consistent with the agency cost explanation that managers are more likely to be compensated with equity when it is difficult to value future growth and to ensure that managers take appropriate actions in the future. [We use book-to-market rather than market-to-book ratios in our study because several companies with low book values resulted in extremely large market-to-book ratios. This usage is consistent with Smith and Watts (1992).]

The proposing and non-proposing firms also differ on performance and growth characteristics, as seen in the logistic regressions in Table 7. We compute the one-year stock-price performance and sales growth for the firms for the year preceding the proposal. Stock-price performance is found by comparing the stock performance of the firm to that of a matched control firm for the year prior to the compensation proposal, using a buy-and-hold strategy. We use the Barber and Lyons (1997) methodology to assign control firms for the purpose of determining stock-price performance.<sup>8</sup> Sales growth is computed as the percent change from the previous year. We find that the proposing firms have significantly higher one-year prior stock-price performance. However, growth in sales is not significant in explaining plan proposals. Because we are looking at the introduction, or the amendment, of management compensation plans, the significance of prior-year stock performance may provide insights about the timing of pay-for-performance compensation in addition to being consistent with the proposal of the plans reflecting agency considerations in high-growth firms. The fact that the plans follow periods of relatively strong performance may suggest that managers view this as a time when their compensation would especially benefit from the link to performance.

Overall, our results suggest that pay-for-performance compensation plans are proposed in those firms where they would be most beneficial to shareholders. Higher institutional holdings and more growth options in the firm are associated with greater probability that compensation plans will be proposed. In addition, firms with good stock-price performance are more likely to introduce performance compensation. These systematic relations support the premise that stock-based compensation plans benefit shareholders.

#### *4.3. Cross-sectional variation in perception of performance plans*

Given the substantial differences in plans and firms, we consider whether shareholder approval of the plans varies based on those differences. We observe variation in shareholder approval through two indicators, the shareholder wealth effect at the announcement of the performance plan, and the percentage of votes approving the plan at the shareholder meeting. We measure how these indicators vary cross-sectionally with dilution levels, voting recommendations and other plan and firm characteristics.

In Table 8, we present summary data on the percent-for vote for the proposals based on several categories. The data are based on the 793 proposals

---

<sup>8</sup>Two other performance measures, cumulative abnormal returns calculated through the use of a control firm and buy and hold returns calculated against the combined NYSE/AMEX/NASDAQ index, are also used in this study. All three performance measures produce similar results. Thus, only the buy and hold returns calculated using a control firm are displayed in these tables.



Table 8  
Distribution of voting returns on compensation proposals, by dilution and negative vote recommendation

Breakdown of proposals by voting returns into different percentage groups. Subsets are formed both for all compensation proposals, those with greater or equal to 5% dilution, those with less than 5% dilution, and for those receiving negative voting recommendations. Voting data are from IRRC.

	All proposals ( <i>n</i> = 793) (%)	Proposals with 5% or more dilution ( <i>n</i> = 178) (%)	Proposals with less than 5% dilution ( <i>n</i> = 589) (%)	Proposals receiving negative voting recommendations ( <i>n</i> = 200) (%)
<i>% Vote Yes</i>				
Less than 50	0.0	0.0	0.0	0.0
50–59	2.5	8.4	0.8	5.5
60–69	8.6	15.7	6.3	13.0
70–79	19.5	30.3	16.6	28.5
80–89	37.1	33.7	38.0	39.0
90–100	32.3	11.8	38.2	14.0

that have both voting return and dilution data available. The results for the full sample are in first column. In the second column, we report voting returns for the proposals that have 5% or more dilution (*n* = 178) and in the third column we report the voting returns for those with less than 5% dilution. The fourth column reports voting returns for those proposals receiving a negative vote recommendation (*n* = 200). Shareholders approved all resolutions; none of the proposals in our sample received a vote of less than 50% in favor of the plan. Nearly 70% of the full sample of proposals received 80% or more approval with 32.3% receiving 90% or more approval.

Vote-for percentages are sensitive to negative plan features, however. When dilution is greater than 5%, the approval percentages are substantially lower, with only 45.5% receiving 80% or more approval and 11.8% receiving 90% or more approval. This is in contrast to the proposals with less than 5% dilution, where the comparable numbers are 76.2% and 38.2% respectively. We see similar shareholder response in those cases in which the proposal received a negative voting recommendation, with only 14% of the proposals receiving 90% or more approval. Nevertheless, while shareholders do appear to vote somewhat less favorably for potentially more negative plans, the data show that shareholders still willingly approve these plans by substantial margins.

We consider the impact of several factors on shareholder perception of management-sponsored compensation plans. Plan-specific characteristics, such as the dilution impact and the vote recommendation from the proxy advisory firm, are expected to affect shareholder wealth effects and voting percentages, as are firm-specific characteristics such as insider and institutional shareholdings,

firm size, firm performance and the book-to-market ratios. In Table 9, we report wealth effects for the firms in our sample differentiated by these characteristics. In general, we compare higher to lower levels of the distinguishing variables, where the distinction is set at the median value, the exceptions being the dilution levels (5% or greater compared to less than 5%) and insider holdings (5% or greater compared to less than 5%). We performed similar analyses comparing the top quartile or the bottom quartile to the remaining observations, with no differences from the results presented here. Regression analysis of the wealth effects is unsuccessful at identifying significant relations beyond confirming those reported here in the univariate tests. We test the impact of these factors on voting with regression analysis, as reported in Table 10. The dependent variable is the percent of positive votes received and the explanatory variables are included as their actual values rather than as indicator variables.<sup>9</sup>

The measures of negative plan characteristics support the hypothesis that institutions and other shareholders consider the specific plan features in determining their approval of the proposals. In Table 9, those plans with less than 5% dilution have positive and significant wealth effects (0.46%,  $t = 2.70$ ) while those plans with more than 5% dilution have wealth effects that are insignificantly different from zero. Since the higher dilution plans are concentrated in the executive compensation proposals, we also consider this subset of 440 proposals. Again, those plans with less than 5% dilution are associated with significantly positive wealth effects (0.62%), while high dilution plans are associated with wealth results that are not significantly different from zero. While the wealth effects are not significantly different from each other, the pattern suggests that shareholders are conscious of the dilution resulting from the plans and are less willing to support high levels of dilution. Importantly, by considering the executive plans alone, we show that shareholders consider dilution in addition to the identity of the plan beneficiary in assessing the value of the plan.

Surprisingly, while negative vote recommendations are associated with high dilution, the wealth effects differentiated by the vote recommendations are not significantly different from each other, with both sets having wealth effects that are positive and significantly different from zero.<sup>10</sup> However, when we consider the regressions explaining the vote-for percentages, we confirm that both

<sup>9</sup>Though we compare the wealth effects and the vote-for percentages to the same set of explanatory variables, we do not find a significant relation between the wealth effects and the vote-for percentages in either univariate or multivariate analysis.

<sup>10</sup>We also consider whether the reasons for the negative vote recommendations have explanatory power in determining the wealth effects related to the plan announcements. Whether it is because the categories are limited in numbers of observations or another reason, we do not identify any significant differences in the results beyond those already reported associated with dilution measures.

Table 9

Wealth effects of the announcement of management-sponsored compensation proposals by various plan and firm characteristics

Cumulative average abnormal stock returns for S&P 500 firms with management-initiated compensation proposals from 1992 to 1995. Results shown are for the day  $-1$  to day  $+1$  event window,  $t$ -statistics are in parentheses. The  $t$ -statistic for the difference between the distinctions within each plan or firm characteristic is shown in the last column.

	CAR (%)	$t$ -statistic	$N$	$t$ -statistic for difference
Dilution = < 5% of outstanding shares	0.46	2.70	408	
Dilution > 5% of outstanding shares	0.17	0.75	149	0.91
<i>Executive plans only:</i>				
Dilution = < 5% of outstanding shares	0.62	3.04	294	
Dilution > 5% of outstanding shares	0.15	0.64	143	1.40
No negative vote recommendation	0.341	2.11	434	
Negative vote recommendation	0.487	1.95	139	0.45
Insider holdings = < 5%	0.187	1.25	378	
Insider holdings > 5%	0.74	2.70	195	1.93
Institutional holdings = < 60%	0.36	1.84	293	
Institutional holdings > 60%	0.39	2.06	280	0.13
Firm assets = < \$3.6 billion	0.43	1.83	287	
Firm assets > \$3.6 billion	0.32	2.31	286	0.40
Prior year stock performance = < 1.5%	0.34	1.93	286	
Prior year stock performance > 1.5%	0.36	1.73	285	0.80
Book-to-market ratio = < 0.442	0.48	2.22	285	
Book-to-market ratio > 0.442	0.28	1.63	288	0.73

dilution levels and negative vote recommendations have a significant and negative impact on shareholder approval. We consider the dilution levels and negative vote recommendations separately and together in the regressions, with no difference in the results for these variables, as reported in Table 10.

There is the question, of course, of what is the optimal level of dilution. Up to some level, increasing dilution levels would be viewed positively because placing additional shares with managers increases the alignment between managerial and shareholder objectives. However, at some point, shareholders would become concerned about too much dilution, and view increasing dilution negatively. We try several non-linear measures of the dilution levels, including trying different break points for changes in the relation between dilution and vote-for percentages, and entering dilution as a quadratic function. Even in the range of zero to 2% dilution, we verify the significantly negative relation between dilution and the vote-for percentages. In addition, the quadratic form of dilution is not significantly different from zero.

Table 10  
 Factors affecting positive vote returns for management-sponsored compensation proposals

Results of ordinary least-squares regressions examining the relation between firm- and plan-specific characteristics and the voting returns for 645 management-sponsored compensation proposals. The dependent variable is set to the positive vote percentage as recorded by IRRC. Negative voting recommendation is set to one if the outside voting firm suggests a vote against the proposal and zero otherwise. Dilution equals the number of new shares under the plan over the number of shares outstanding. Managerial holdings are recorded as those reported on the proxy corresponding with the meeting date and includes those held personally as well as those held by family members or related firms. Institutional shares are recorded as those reported in Spectrum 3 for December year-end prior to the meeting date. Firm size is the log of market capitalization in millions. Market capitalization and book-to-market ratio data are obtained from COMPUSTAT tapes for the year-end prior to the meeting date. Prior one-year stock performance is found by comparing the buy and hold stock returns of the firm to that of a control firm following Barber and Lyons (1997). Participant type and new, replacement, additional or amended plan proposals are identified from the proxy statement. *P*-values are shown in parentheses.

	(1)	(2)	(3)	(4)
Intercept	0.8250 (0.0001)	0.8281 (0.0001)	0.8378 (0.0001)	0.8260 (0.0001)
Dilution		-0.9020 (0.0001)	-0.7467 (0.0001)	-0.7303 (0.0001)
Negative voting recommendation	-0.0631 (0.0001)		-0.0444 (0.0001)	-0.0431 (0.0001)
Managerial holdings	0.1445 (0.0001)	0.1447 (0.0001)	0.1362 (0.0001)	0.1379 (0.0001)
Institutional holdings	-0.0408 (0.1119)	-0.0326 (0.1944)	-0.0339 (0.1670)	-0.0331 (0.1765)
Firm size	0.0064 (0.0187)	0.0068 (0.0105)	0.0064 (0.0143)	0.0065 (0.0126)
Prior one-year stock performance	0.0002 (0.9772)	-0.0084 (0.3187)	-0.0034 (0.6818)	-0.0038 (0.6460)
Book-to-market ratio	-0.0229 (0.0926)	-0.0268 (0.0428)	-0.0187 (0.1509)	-0.0187 (0.1511)
Executive participants				0.0038 (0.7368)
New proposals				0.0309 (0.0268)
Replacement plans				0.0080 (0.3742)
Additional plans				-0.0013 (0.8995)
Adjusted $R^2$	0.1408	0.1799	0.2167	0.2210

We find that the wealth effects and vote-for percentages are also related to the ownership structure of the firm. Not surprisingly, since officers and directors presumably vote for plans that increase their own compensation, proposals receive higher voting percentages when officer and director holdings in the firm are larger.<sup>11</sup> However, we also find that the wealth effects are significantly higher for firms where insider holdings are 5% or greater (0.74% vs. 0.18%). The same significant relation is observed if we compare firms with 10% or greater insider holdings to those with less than 10%. These results are consistent with shareholders believing that managers will make better compensation proposals when their personal stake is greater. We find little evidence that the wealth effects or voting percentages are significantly affected by institutional holdings, suggesting that institutional investors are not necessarily for or against stock-based compensation proposals on an overall basis and consider specific plan characteristics in plan evaluation.

Explanatory variables related to firm characteristics, including firm size, book-to-market ratio, and the prior year stock performance, also provide some impact on the vote-for percentage. However, these characteristics do not seem to have significant impact on the shareholder wealth effects. We find that larger firms have significantly greater support for their stock-based compensation proposals and the book-to-market ratio is marginally negatively related to voting approval. These results are supportive of our earlier finding that pay-for-performance compensation schemes would be more likely to be viewed favorably when the firm has more growth opportunities, as proxied through firm size and the book-to-market ratio.

In the last regression reported in Table 10, we include indicator variables related to additional plan characteristics such as the plan beneficiary (the excluded set is nonemployee director plans) and whether the plan is a new, replacement or additional plan (the excluded set is amended plans). Only the new-plan indicator variable is significant, suggesting that new plans receive a higher voting approval than revisions to existing pay-for-performance compensation schemes.<sup>12</sup>

Overall, our wealth effects and voting results suggest that, although these plans receive a large vote-for percent, the approval is significantly related to both the negative features of the plan, as measured by the dilution resulting from the plan and negative vote recommendations, and the positive features of

---

<sup>11</sup>When we recompute the vote-for percent on the proposals excluding the holdings of the insiders (assuming they vote for the plans), the insider-holdings variable is insignificantly different from zero in the voting regressions.

<sup>12</sup>We also consider whether the plan is the first observation for a firm in our sample or a second or later plan in the wealth effect and voting analysis. We find no significant differences based on the timing of the plan. Of course, we do not know whether previous plans were announced outside of the time period of our sample. In addition, the indicator variables of whether the plans are new, replacement, additions or amendments measure similar considerations.

the plan, as measured by their appropriateness to the firm's assets and growth characteristics. Even though these plans are, on average, viewed positively by shareholders as measured by wealth effects and overall approval rates, it appears that investors are providing information to firms about the acceptability of different plan features.

#### *4.4. Post-performance*

The evidence presented to this point, showing systematic relations between shareholder approval of the plans and firm and plan characteristics, is consistent with the view that stock-based compensation plans further align managerial incentives. There is also the possibility, however, that the plan proposal is related to management's inside information about the firm's prospects. Management might propose pay for performance before a period of expected good performance, and the announcement of the plan signals the market about management's expectations. We specifically consider performance in this section to further understand the timing of the pay-for-performance compensation plans. We compare prior-year and post-year performance for proposing and non-proposing firms in Tables 11 and 12. In Table 11, we compare the sample of firms not proposing a compensation plan on a specific ballot to the sample of firms that are proposing. Because each proxy statement is considered a separate observation, firms may appear in both samples depending on whether they proposed a plan on any specific proxy statement. Again, we assume that any overlap between the groups would bias us against finding significant differences between proposers and non-proposers. In Table 12, we look at same-firm performance before and after the announcement of the performance plan.

To test the relation between plan submission and post-implementation performance, we perform univariate analyses of financial performance variables. We report here the results from the three methods of calculating stock performance. We calculate stock performance as (1) the buy and hold return differences for the firm and its control, (2) the cumulative abnormal return for the firm relative to its control, and (3) the buy and hold return difference for the firm and the market index (the value-weighted, combined NYSE/AMEX/NASDAQ index). Control firms are chosen based on size and book-to-market ratio, as in Barber and Lyon (1997). In addition, we examine several performance measures based on accounting data, including earnings, sales (both deflated by assets), and the percent change in assets and in sales. These variables are found on the COMPUSTAT tapes for the year-end prior to and year-end following the meeting date.

The first column of Table 11 reports these measures of performance for firms that had no compensation proposal on their proxy ballot in a given year. The second column reports the same data for companies with compensation

Table 11  
 Prior- and post-performance characteristics of firms proposing and not proposing compensation resolutions

The data are categorized by “no compensation proposal on the ballot”, “compensation proposal on the ballot” and “executive compensation proposal on the ballot”. We use three methods to measure one-year prior and poststock performance. We compare the stock-price performance to (1) a control firm, using a buy and hold methodology, (2) a control firm, using cumulative abnormal returns, and (3) the value-weighted NYSE/AMEX/NASDAQ index, using a buy and hold methodology. The control firm is chosen following Barber and Lyons (1997) methodology. Earnings, sales, assets, and prior-year assets and sales growth are found using the COMPUSTAT data. *t*-statistics compare the compensation proposal categories to the no compensation proposal category.

	No compensation proposal ( <i>n</i> = 1256)	All compensation proposals ( <i>n</i> = 634)		Executive compensation ( <i>n</i> = 439)	
	Mean	Mean	<i>t</i> -statistic	Mean	<i>t</i> -statistic
<b>One-year prior performance</b>					
<i>Stock performance</i>					
Control, buy and hold	-0.0194	0.0557	-3.3527	0.0474	-2.6552
Control, CAR	-0.0144	0.0488	-3.6373	0.0459	-3.1060
Index, buy and hold	0.0197	0.0898	-4.2823	0.0821	-3.5647
Earnings/Assets	0.0411	0.0400	-0.5301	0.0462	-1.2989
Sales/Assets	0.9707	1.0374	-1.7585	1.0923	-1.2689
Asset growth	0.0950	0.1334	-1.5493	0.1496	-1.7138
Sales growth	0.0660	0.1002	-1.5152	0.1126	-1.5595
<b>One-year post performance</b>					
<i>Stock performance</i>					
Control, buy and hold	0.0133	0.0496	-1.9557	0.0647	-2.3225
Control, CAR	0.0048	0.0456	-2.5669	0.0583	-2.8208
Index, buy and hold	0.0146	0.0390	-1.7099	0.0502	-2.1043
Earnings/Assets	0.0431	0.0496	-1.8555	0.0499	-1.6732
Sales/Assets	0.9652	1.0257	-1.7299	1.0136	-1.1781
Asset growth	0.0958	0.1229	-1.9295	0.1213	-1.7524
Sales growth	0.1364	0.1613	-0.3557	0.1864	-0.5832

proposals in a year, and the third column gives the *t*-statistic used in determining the significance of the difference between these two categories. The last two columns report similar data for those firms that offered compensation proposals related to executive compensation only. The *t*-statistic again relates to the control group of firms that did not include compensation proposals on their ballots in the given year.

We find that firms proposing compensation plans have significantly higher one-year prior stock-price performance than do the firms not proposing plans,

Table 12

Prior and post-performance characteristics of firms proposing stock-based compensation resolutions

Univariate comparisons of pre-plan proposal performance and post-proposal performance for 519 firms with stock-based compensation-related items. We use three methods to measure one-year prior and post stock performance. We compare the stock-price performance to (1) a control firm, using a buy and hold methodology, (2) a control firm, using cumulative abnormal returns, and (3) the value-weighted NYSE/AMEX/NASDAQ index, using a buy and hold methodology. The control firm is chosen following Barber and Lyons (1997) methodology. Earnings, sales, assets, and prior-year assets and sales growth are found using the COMPUSTAT data. *t*-statistics compare the prior and post-resolution performance levels.

	Post-proposal	Pre-proposal	Mean difference	<i>t</i> -statistic
Stock performance				
Control, buy and hold	0.0400	0.0371	0.0029	0.1245
Control, CAR	0.0384	0.0326	0.0058	0.7634
Index, buy and hold	0.0312	0.0718	-0.0406	-2.2421
Earnings/assets	0.0475	0.0410	0.0065	2.1334
Sales/assets	1.0084	1.0161	-0.0077	-0.7387
Asset growth	0.1183	0.1312	-0.0129	-0.4802
Sales growth	0.1674	0.0938	0.0736	1.1685

and that the proposing firms have significantly higher stock-price performance in the year following the proposal. (Since all plans received at least a 50% vote-for, we assume that all plans were approved and implemented.) We also find that one-year post earnings/assets and sales/assets are significantly higher following plan implementation than in the non-proposing firms.

We also examine firm-specific changes in performance before and after the pay-for-performance proposals (Table 12). We find that the proposing firms have strong stock performance both before and after the plan announcement. Thus, while the data reported in Table 11 suggest that proposing firms have significantly better stock-price performance than non-proposing firms both before and after the proposal, the results in Table 12 suggest that the firms continue their good performance after the proposal. We also find evidence of significant increases in earnings after the plan implementation. This finding is consistent with the findings of Tehranian and Waagelein (1985) related to short-term compensation plans.

Our performance results are consistent with managers signaling shareholders that the earlier strong performance will be continued and that they are willing to tie their compensation to that anticipated strong performance. Thus, we cannot rule out the importance of a signaling effect in the observed share price reactions at the plan announcements. Nevertheless, the previous evidence that shows that shareholder perception of plans is systematically related to plan and firm characteristics and that plans are adopted where they would be most



appropriate suggests that the signaling effect is not the only reason for the positive reaction to plan announcement.

## **5. Conclusions**

This study examines managerial proposals to tie compensation to performance through incentive pay plans. From almost 2000 proxy statements for the S&P 500 firms from 1992 through 1995, we identify 958 compensation proposals appearing on 810 ballots. Most of these proposals target executives, although nonemployee directors and employees are also frequent beneficiaries. Our goal is to gain further insight into why managers propose pay-for-performance compensation plans and how shareholders view these plans and why.

We investigate several questions. First, do the wealth effects associated with these proposals indicate that they are viewed as good news for shareholders? While agency theory frequently cites incentive compensation schemes as a means of aligning managerial incentives with shareholder wealth, it is also possible that the specific plans proposed give managers too much flexibility in rewarding themselves. Overall, however, we find that the plan proposals are accompanied by significant increases in shareholder wealth, especially for those plans that target executives or top management. Second, we question whether the firms that propose compensation plans are the ones that could most benefit from them based on agency cost considerations. Drawing from earlier work, we use logistic regressions to consider the differences in characteristics between proposing and non-proposing firms. We find that proposing firms are more likely to have lower book-to-market ratios in the year preceding the announcement, consistent with the importance of asset type in determining the inclusion of pay-for-performance features. We also find that firms with higher institutional holdings are more likely to propose performance plans. These results again support the premise that performance plans are beneficial to shareholders and that they are proposed where they do the most good.

Third, we examine shareholder perception of the plans through analysis of the wealth effects at the announcement of the pay-for-performance compensation scheme and the percentage of shares voting for the proposal. We consider whether the items receive more support in those firms where they seem to be most appropriate and where they have fewer negative features. We find that shareholders have a more positive perspective on the plans in larger firms and in firms that have lower book-to-market ratios. However, negative plan features such as higher dilution ratios and negative vote recommendations result in less positive wealth effects and significantly lower approval percentages.

Our examination of performance following plan implementation appears to support the premise that plans are introduced in firms with strong performance. We find that firms proposing pay-for-performance plans have better stock-price performance than non-proposing firms do in the year before and the year after the proposal. In considering same-firm performance, we find that the firms maintain strong stock-price performance and that accounting earnings increase significantly after plan implementation. Thus, the compensation plans seem to be concentrated in strong firms that continue to perform well, rather than in firms that “turned things around” as a result of the compensation schemes. While the performance results are consistent with the wealth effects being related to a signaling of expected good performance, our other results suggest that signaling is not the only explanation for the favorable shareholder wealth effects at plan announcements.

Overall, the evidence suggests that pay-for-performance schemes are beneficial to shareholders. Shareholders gain at the announcement of the plans, especially when the plans are directed to pay for the top executives of the firm and when dilution is not excessive. Proposing firms seem to be those firms that can most benefit from the plans, given their asset type and agency considerations. In addition, firms with more potential agency costs have the highest approval ratings for the plans that can help to mitigate those agency problems. The dramatic increase in the 1980s and 1990s in the sensitivity of CEO pay for performance verified by Hall and Liebman (1998) seems to predict well for continued improvements in aligning managerial incentives with shareholder wealth.

## References

- Baker, G., Jensen, M., Murphy, K., 1988. Compensation and incentives: practice vs. theory. *Journal of Finance* 43, 593–616.
- Barber, B., Lyon, J., 1997. Detecting long-run abnormal stock returns: the empirical power and specification of test statistics. *Journal of Financial Economics* 43, 341–372.
- Bethel, J., Gillan, S., 2000. The impact of broker votes on shareholder voting and proposal passage. Working paper, Babson College and TIAA-CREF Institute, 2000.
- Brickley, J., Bhagat, S., Lease, R., 1985. The impact of long-range managerial compensation plans on shareholder wealth. *Journal of Accounting and Economics* 7, 115–129.
- Brickley, J., 1986. Interpreting common stock returns around proxy statement disclosures and annual shareholder meetings. *Journal of Financial and Quantitative Analysis* 21, 343–349.
- Brown, S., Warner, J., 1980. Measuring security price performance. *Journal of Financial Economics* 8, 205–258.
- Brown, S., Warner, J., 1985. Using daily stock returns in the case of event studies. *Journal of Financial Economics* 14, 3–31.
- Campbell, C., Wasley, C., 1999. Stock-based incentive contracts and managerial performance: the case of Ralston Purina Company. *Journal of Financial Economics* 51, 195–217.
- Core, J., Holthausen, R., Larcker, D., 1999. Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics* 51, 371–406.

- Gaver, J., Gaver, K., 1993. Additional evidence on the association between the investment opportunity set and corporate financing, dividend and compensation policies. *Journal of Accounting and Economics* 16, 125–160.
- Hall, B., 2000. What you need to know about stock options. *Harvard Business Review* 78, 121–129.
- Hall, B., Liebman, J., 1998. Are CEOs really paid like bureaucrats? *Quarterly Journal of Economics* 113, 653–691.
- Hall, B., Murphy, K., 2000. Stock options for undiversified executives. Working paper 8052, NBER.
- Jarrell, G., Brickley, J., Netter, J., 1988. The market for corporate control: the empirical evidence since 1980. *Journal of Economic Perspectives* 2, 49–68.
- Jarrell, G., Poulsen, A., 1987. Shark repellents and stock prices: the effects of antitakeover amendments since 1980. *Journal of Financial Economics* 19, 127–168.
- Jensen, M., Murphy, K., 1990. Performance pay and top-management incentives. *Journal of Political Economy* 98, 225–284.
- Kole, S., 1997. The complexity of compensation contracts. *Journal of Financial Economics* 43, 79–104.
- Lambert, R., Larcker, D., 1987. An analysis of the use of accounting and market measures of performance in executive compensation contracts. *Journal of Accounting Research* 25, 85–129.
- Meulbroek, L., 2000. The efficiency of equity-linked compensation: understanding the full cost of awarding executive stock options. Working paper 00-056, Harvard Business School.
- Practising Law Institute, 1997. *The SEC Speaks in 1997*. Practising Law Institute, New York, NY.
- Rappaport, A., 1999. New thinking on how to link executive pay with performance. *Harvard Business Review* 77, 91–105.
- Smith, C., Watts, R., 1992. The investment opportunity set and corporate financing, dividend and compensation policies. *Journal of Financial Economics* 32, 263–292.
- Stern Stewart Roundtable, 1992. Management incentive compensation and shareholder value. In: Chew Jr., D. (Ed.), *Discussing the Revolution in Corporate Finance*. Blackwell Business, Malden, MA, pp. 316–336.
- Tehrani, H., Waeglein, J., 1985. Market reaction to short-term executive compensation plan adoption. *Journal of Accounting and Economics* 7, 131–144.
- TIAA-CREF, 2000. TIAA-CREF Policy Statement on Corporate Governance, <http://www4.tiaa-cref.org/libra/governance/index.html>.
- Wagner, R., Wagner, C., 1997. Recent developments in executive, director, and employee stock compensation plans: new concerns for corporate directors. *Stanford Journal of Law, Business, and Finance* 3, 5–29.
- Yermack, D., 1995. Do corporations award CEO stock options effectively? *Journal of Financial Economics* 39, 237–269.
- Yermack, D., 1997. Good timing: CEO stock option awards and company news announcements. *Journal of Finance* 52, 449–476.