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Quid-pro-quo exchanges of outside director defined benefit pension plans for equity-based compensation

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The independence of outside directors is critical to corporate board effectiveness. We examine a unique period in corporate governance when outside directors' defined benefit pensions are replaced with increases in equity. Firms with pension plans significantly underperform their industry in terms of stock returns. Firms terminating the pension plans in exchange for equity have significant increases in stock returns relative to their industry subsequent to the change. All samples outperform the ROA and ROE industry medians both before and after the change in compensation, indicating pressure from organized investors likely comes from stock performance, not accounting performance. Investor rights pressure and outside director compensation and not takeover risk or institutional ownership best explain firms altering outside director compensation, with board of director effectiveness improving.

1 Introduction

Issues of corporate governance and specifically the independence of the board through the roles of outside directors have increased substantially in the wake of corporate scandals. The relevance and importance of the independence of outside directors is heightened following the collapse of Enron, Worldcom, and the Grasso pay scandal, among others. Agrawal and Chadha (2005) find that independent directors with financial expertise are valuable in providing oversight of a firm's financial reporting practices. Both major exchanges, NASDAQ and NYSE, and the Securities and Exchange Commission (SEC) have issued new standards to make

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outside directors' role more significant in the firm's governance structure. We examine linkages between outside influences, outside director compensation and board effectiveness by focusing on a specific change in corporate governance. In particular, we examine a sample of firms with boards electing to replace outside directors' defined benefit pensions with increases in equity compensation. Corporations began to widely sponsor outside director defined benefit plans in the mid to late 1980s, but these plans have nearly vanished following a period of intense public criticism from institutional investors, Investors' Rights Association of America (IRAA), and the National Association of Corporate Directors (NACD).¹ Empirical analysis of the decision to change the form of compensation for outside directors is relevant to the board's independence and monitoring effectiveness. Examining variables relating to causes of this replacement decision, including stock return and accounting performance, provides insight into the roles of institutional investors, investor rights groups, and takeover activity in corporate board governance and effectiveness.

While the issues of effective corporate governance continue to be debated, the importance of outside directors to firm valuation has long been discussed. Fama (1980), and Fama and Jensen (1983a, b) premise that outside directors value their reputation and uniquely influence corporate governance by monitoring management, limiting managerial discretion, and lowering contracting costs between shareholders and management. Jensen and Meckling (1976) suggest that the form of director compensation influences how objective outside directors may be when evaluating whether management proposals are in the best interests of stockholders. Others (Hermalin and Weisbach, 1997; Noe and Robello, 1996) acknowledge the role of incentive compensation for directors to effectively monitor management activity. However, as noted by Jensen and Warner (1988), while share ownership should provide the correct incentive for both managers and directors, the precise effects are not well understood. Perry (1998) finds that directors' incentive compensation of independently oriented boards increases the probability of dismissal of chief executive officers of poorly performing firms than counterparts in a control sample. Mork, Schliefer, and Vishny (1988) find that outside directors can become ineffective monitors at certain levels of ownership. This misalignment of incentives is voided at higher levels of ownership and the interests of outside directors and stockholders become realigned.

TQ1

Other studies test whether the composition of the board could be central to its influence and have an impact on shareholder value. Rosenstein and Wyatt (1990) find positive investor reactions to appointments of outside directors. Weisbach (1988) examines 495 companies between 1977 and 1980 and concludes that firms with outsider dominated boards are more likely to be activist, increasing the likelihood of top management being removed by the board. Byrd and Hickman (1992) find similar evidence of outside director influence when examining tender offers during the period of 1980–1987. They conclude that acquisition announcement date returns are

¹ *The Wall Street Journal* article, dated 3/9/2000 on page A1, reports on a study conducted by Pearl Meyer & Partners, a New York compensation firm. This survey of the 1999 proxies for a random sample of companies found that defined benefit pensions had 'nearly vanished from packages due to criticism from investors who prefer directors to own their own equity stakes'.

significantly less negative when a majority of the bidding firm's board are independent outsiders. Cotter, Shivdasani, and Zenner (1994) find a target's tender offer premium is higher the more additional directorships outside directors have. Finally, Brickley, Coles, and Terry (1994) observe a positive stock market reaction to the adoption of a poison pill takeover defense only when a majority of the directors are outsiders. AQ2

Subsequent studies (i.e., Denis and Serrano, 1996) suggest board effectiveness has become less significant in the context of a growing role of external influences such as corporate control and increased institutionalization of company equity holdings. Denis and Serrano (1996) study a sample of firms that experience unsuccessful corporate control contests in the latter 1990s. Their general conclusion is that outside investors who purchase the stock following the failed corporate control event cause most of the subsequent management turnover. The results of Mikkelsen and Partch (1997) confirm the general interpretations of Denis and Serrano (1996). They find management turnover is greatest during a period of active takeovers and significantly less during a period of low takeover activity. In contrast, Huson, Parrino, and Starks (2001) find that, despite the decline in takeover activity in the late 1980s, the frequency of forced management turnover and outside executive succession increase in the 1990s. They conclude that internal monitoring mechanisms are not less effective when the takeover activity declines. Agrawal and Knoeber (1996) divide the takeover threat into competitive and risk components. As a result of the external corporate control risk component, management would likely demand higher compensation to reflect the takeover threat. Their results indicate that the external corporate control risk affects management decision making regardless of the firm's governance policy.

While there are several studies on the disciplining of top management, there is little empirical research on the disciplining of outside directors. Gilson (1990) finds outside directors in failing firms have one-third fewer directorships after departure from the board and Kaplan and Reishus (1990) find outside directors are less likely to obtain additional outside directorships when the firm's board on which they sit decreases dividends. Recent studies relating to corporate governance variables focus on the importance of various attributes of corporate governance and the impact on firm value. Bebchuk and Cohen (2005) find that boards with better governance have a higher Q-ratio, reflecting greater value. Brown and Caylor (2004) find in their composite measures of corporate governance that executive and director compensation are the most important attributes of governance with respect to corporate performance.

If the arguments of institutional investors and investor rights groups are correct, firms with defined benefit pensions for outside directors should underperform, have characteristics of poor governance, and face greater outside pressure. Additionally, outside director independence should increase as a result of the quid-pro-quo exchange of defined benefit retirement plans for equity, their interests should be more closely aligned with shareholders, and firm performance should measurably improve, *ex post*. Our results provide support for the monitoring hypothesis in which the change in outside director compensation is consistent with an increase

in board effectiveness and firm performance. Similar to reports in the popular press, we find that this shift in compensation is most affected by external investment community pressure and internal governance variables. We find firms with pension plans underperform their industries as measured by stock returns, but not accounting measures of performance. Firms terminating pension plans with the resulting increased equity compensation for outside directors enhance board of director monitoring effectiveness as measured by stock return performance. Using a logistic regression model, we find investor rights pressure and governance variables and not takeover risk or institutional ownership best explain the choice of firms to alter outside director compensation. More importantly, these variables also significantly influence firms' decisions to replace defined benefit pension plans with increases in equity-based compensation for outside directors. While there is evidence that firms terminating outside director pension plans improve stock return performance relative to their industries, termination of the plan may also have the added benefits of investor relations, good will, and appearance.

2 Background on director compensation

The role of director compensation has received attention as compensation evolved from a \$20 gold coin in the early 1900s to include employee-type benefits and incentives in the 1980s and 1990s (Vafeas, 1999 and Carey, Elson, and England, 1996). Jensen and Meckling (1976) were the first to formally conclude that the form of director compensation influences how objective outside directors may be when evaluating whether management proposals are in the best interests of stockholders. Models of the firm (Hermalin and Weisbach, 1997; Noe and Robello, 1996) acknowledge this role of incentive compensation for directors to effectively monitor management activity. Perry (1998) finds incentive compensation for directors of independently oriented boards increases the likelihood that chief executive officers of firms that perform poorly will more likely be dismissed than their counterparts in a control sample. Fich and Shivdasani (2004) find stock option plans for outside directors do help align the incentives of outside directors and shareholders, improving firm value.

Pension plans are used by organizations to recruit, retain, and retire employees. A particularly attractive pension plan option rewarding long service is the defined benefit pension plan. During the mid- to late-1980s, a number of corporations began sponsoring defined benefit plans for outside directors. Several theories exist about the widespread adoption of pension plans for outside directors. Human resources theory would state that the plans were adopted as part of the overall compensation package to attract and retain outside directors in a competitive environment for director services. A related theory would be that outside director retainer fees were relatively flat during the 1980s and increasing the indirect (benefit) part of total compensation was a less obvious way of increasing compensation than increasing the dollar value of retainer and meeting fees. Directors could have also been trying to expropriate shareholder wealth, since the present value of this form of deferred compensation can be quite high. The theory that is most commonly argued by

investors when calling for the termination of outside director defined benefit pensions is that such plans are an attempt by management to buy the loyalty of directors.

Various institutional investors, Investors' Rights Association of America (IRAA), and the National Association of Corporate Directors (NACD), among others, became highly critical of the practice of using defined benefit pensions as part of outside directors' compensation. The argument is that defined benefit pension plans have the pernicious effect of compromising outside director independence and impartiality because such compensation is used by management to ensure their loyalty and agreement with management initiatives. Different groups publicly called for replacement of pension plans for outside directors with performance-based compensation to make companies more responsive to shareholder interests and improve firm performance. Subsequently, many pensions were replaced with larger equity stakes to ostensibly better align the outside directors' interests with those of shareholders.² By investigating this decision by a sample of firms, we are able to further decipher the role of external monitoring influences on the effectiveness of boards of directors' monitoring and to determine if the change in compensation structure is value adding.³

A review of the proxy statements of the sample used in this study show that outside director compensation includes cash, equity, and other benefits. The cash component of non-employee director compensation usually includes an annual retainer for serving on the board and meeting fees. Most corporations in our sample allow directors to voluntarily defer the cash portion of their compensation. Equity ownership plans include paying all or part of the annual fee in equity, a stock ownership requirement, grants of restricted or unrestricted stock and stock options. The last category of compensation is other benefits. A popular form of other benefits is outside director retirement plans. Directors' retirement plans are exclusively defined benefit plans that typically have an age (65) and years of service (10) requirement for benefit accrual and payment. The defined benefit is usually a percentage of the annual retainer up to 100%. Benefit duration is typically a stated number of years, but some companies provided a lifetime benefit to qualifying directors. In most cases, a beneficiary (spouse) can be designated to receive the benefit for a period certain. In addition to retirement plans, other benefits included medical expense plans, life

² The proxy statement of one of the firms that has a quid-pro-quo exchange states the retainer plan and the amended pension plan replaces the existing plan with the annual grant of 250 shares of stock and the termination of future benefits under the pension plan. The proxy goes on to state, 'These changes are designed to increase generally the portion of non-employee Director compensation that is equity-based, thereby aligning the Directors' interests more closely with those of the Share Owners.'

³ Several earlier studies test whether composition of the board could be central to the board's influence and have an impact on shareholder value. Rosenstein and Wyatt (1990) find a positive stock market reaction to appointments of outside directors. Weisbach (1988) examines 495 companies between 1977 and 1980 and concludes that firms with outsider-dominated boards are more likely to be activist, increasing the likelihood of top management being removed by the board. Byrd and Hickman (1992) find similar evidence of outside director influence when examining tender offers during the period of 1980–1987. They conclude that acquisition announcement date returns are significantly less negative when a majority of the bidding firm's board is independent outsiders. Cotter, Shivdasani, and Zenner (1997) find a target's tender offer premium is higher the more additional directorships outside directors have. Brickley, Coles, and Terry (1994) observe a positive stock market reaction to the adoption of a poison pill takeover defense only when a majority of the directors are outsiders.

insurance, services, matching donation programs to charities, and director legacy donations.

The NACD (1995) studied director compensation and, as a result, two principles of director compensation were developed.⁴ First, directors should be compensated in a manner that aligns their interests with those of the shareholders they represent. Second, directors' compensation packages should be value adding from the perspective of both the director and corporation. An issue addressed in this paper is the use of defined benefit pension plans as a component of compensation for outside directors. Defined benefit pension plans reward time and service and consequently may erode outside directors' independence, causing them to align themselves more with management than with shareholders. Following the NACD (1995) Report, many firms began terminating their outside director defined benefit pensions and replacing them with equity-based compensation to meet individual and institutional investor demands to create more independent boards of directors and ensure that the boards focus on creating shareholder value. Perusal of the proxy statements of companies targeted by investor groups in our sample show that director independence and a lack of performance-based compensation are the usual reasons given in the shareholder resolutions that called for the termination of defined benefit retirement plans for outside directors. Many targeted firms' board of directors initially did not support the shareholder resolutions calling for the termination of the retirement plan. The typical reason given for opposition was that the pension component of total compensation was necessary to attract and retain qualified non-employee directors. Firms terminating the plans reasoned that defined benefit pension plans act as deferred cash compensation and do not sufficiently align the interests of directors with shareholders. We provide evidence on the determinants of outside director compensation, how governance characteristics affect the structure of outside directors' compensation, and whether equity-based plans better align the incentives of outside directors with shareholders.

3 Sample

The initial list of firms for our study was obtained from a large international consulting organization. The organization followed 200 large well-established firms and provided us with a report identifying companies according to firms' outside director retirement plans during the 1995–1996 proxy season.⁵ This proxy season is

⁴ NACD (1995) "Best Practices" are as follows: (a) Establish a process by which directors can determine the compensation program in a deliberative and objective way (b) Set a substantial target for stock ownership by each director and a time period during which this target is to be met. (c) Define the desirable total value of all forms of director compensation. (d) Pay directors solely in the form of equity and cash – with equity representing a substantial portion of the total up to 100 percent; dismantle existing benefit programs and avoid creating new ones. (e) Adopt a policy stating that a company should not hire a director or a director's firm to provide professional or financial services to the corporation. (f) Disclose fully in the proxy statement the philosophy and process used in determining director compensation and the value of all elements of compensation.

⁵ Six proxy mailings and stockholder meetings are in 1995. Of the final sample of 169, 93.49% of the proxies are mailed during February through April of 1996 with corresponding stockholders' meetings taking place during February through June of 1996. Five proxies are mailed later in 1996 with one stockholder meeting occurring in January of 1997.

of particular importance because the practice of compensating outside directors with defined benefit pensions that developed in the 1980s had become a significant corporate governance issue and was receiving a great deal of media and investor attention. As a consequence, by 1999 almost all large publicly traded firms had terminated defined benefit pensions for outside directors, including every firm in our sample. The final sample used in our study was developed as follows. Six firms are dropped because of significant confounding events (e.g. bankruptcy) or the firm's proxies are not available from the SEC's EDGAR database. Financial institutions are dropped because they are regulated resulting in a sample size of 169. Within this sample, 45 firms did not compensate outside directors with a defined benefit pension, while 124 firms did.

To study the decision to retain or terminate the pension plan, we further restrict these firms to having a quid-pro-quo exchange of outside directors' defined benefit pension plans for equity-based compensation and firms that did not simultaneously alter top executive incentive plans during the proxy season. These restrictions are imposed upon the subset of firms with pension plans to allow for a more precise test of whether equity-based plans better align the incentives of outside directors with shareholders. Controlling for these variables reduces the 124 firms with pension plans to 99 observations. Forty-one terminate these pension plans in exchange for equity compensation during the proxy season and 58 retain these plans. Finally, there are sub-samples of firms where the board terminates outside director defined benefit pensions unilaterally ($n=22$) and where the board formally discloses the change in outside director compensation via a management resolution where shareholder approval is required ($n = 19$).

Proxy statements for each firm from the SEC's EDGAR database are used to obtain firm specific data, e.g., relevant director and board information, and to identify whether the firm employed management resolutions in their decisions to alter outside directors' deferred compensation plans. Additional data on the firms and their industries are obtained from Compustat, Securities and Data Corporation's Merger and Acquisition, Investor Rights Association of America (IRAA), and the Center for Research in Security Prices (CRSP) databases.

4 Univariate results

We examine variables representing four general categories of explanatory influences in the model for the existence of a defined benefit pension plan and the shift in outside director compensation. Table 1 lists these representative variables used in previous research as well as univariate tests for differences in means.⁶ The first category presented in Panel A is external pressure, which includes the potential influence of institutional investors and shareholder rights groups as well as takeover activity

⁶ Due to the potential for a difference in the variances of the two samples, we first test for a significant difference in the variance. On the basis of the significance of this test we choose the appropriate t-statistic using pooled variances or Satterthwaite's adjusted t-statistic for unequal variances. The difference in medians is tested for using the nonparametric Wilcoxon-sign test. Tests using medians provide qualitatively the same results as tests of the means.

in the industry, defined by a two-digit SIC code.⁷ The objective in using the first three variables of share ownership, percent of shares owned by, and number of, non-block institutions and percent shares owned by blockholders, is to reflect the possibility that outside investors may have different levels of influence. The latter is measured as the percentage of dollars of takeover activity in a firm's industry across the sample for five years prior to the event year. The definition of takeover activity used is similar to that of Mitchell and Mulherin (1996), where activity includes tender offers, mergers, leveraged buyouts, significant sales of assets, significant purchase of assets, and major recapitalizations. Although firms with defined benefit pension plans have a greater percentage of ownership by non-blockholder institutions, the ownership is diluted over a significantly greater number of institutions. Moreover, firms with pension plans have a significantly lower percentage of shares held by blockholders. The primary external characteristic of those firms changing their compensation systems is the significantly higher likelihood of being a target of the IRAA. There is greater takeover activity in the industries of firms with defined benefit pensions for their outside directors consistent with the argument that these plans are used as additional compensation to attract and retain. No significant difference exists between those firms that terminate or retain the pension plans. However, firms that unilaterally terminate defined benefit pension plans are in industries with significantly less takeover activity than firms retaining directors' plans.

The second category, presented in Panel B, is internal governance. These variables suggest a mix in board governance effectiveness. Previous research generally finds that the lower percentage of representation by insiders on boards improves the potential for an effective board.⁸ On the other hand, the greater board size and likelihood of the chief executive officer being the chairperson suggest the opposite. We find firms that never had an outside directors' plan are more controlled by insiders, and that inside directors make up a higher percentage of the board, have longer tenure, and own a higher percentage of shares. Firms that have plans have larger boards, fewer insiders, younger outside directors, shorter tenure for the CEO and insiders, and the CEO is more likely to be the chairperson. Firms that terminate the plan have fewer insiders and significantly less insider stock ownership. Plan termination via a management resolution is made by firms that have insiders with greater equity holdings and outside directors that are significantly younger and have a shorter tenure.

The third category of explanatory variables in this study and reported in Panel C is outside directors' compensation. Firms with outside directors' pension plans have significantly higher equity-based compensation, using significantly more (less) restricted stock (options), when compared to the sample of firms that never had a plan. The use of these forms of compensation may be a mechanism to offset potential agency problems associated with the defined benefit pension plans. While firms

⁷ In our terminology, external pressure refers to the combined effects of institutional investors, investor rights advocates, and takeover risk. Other studies employ differing definitions. For example, Cremers and Nair (2003) refer to blockholders and board of directors as internal governance, while takeover likelihood, or corporate control, is considered external governance.

⁸ We define inside directors as those currently employed full-time by the firm and outside directors as those individuals who have no contracts and no previous employment with the company.

Table 1. Means and univariate statistics for outside director compensation and hypothesized determinants

The sample consists of 169 firms followed by a large international consulting organization during the 1995–1996 proxy season. ^a From this list of firms, one group of firms (No Plan) did not compensate outside directors with a defined benefit pension plan, while the other group (Plan) did. From the sub-sample of firms (Plan) that used the defined benefit pension for outside directors, one group continued (Retain) the plan and the other group (Terminate) terminated it in exchange for additional equity compensation for the outside directors. ^b Last, the Terminate sub-sample is divided into a group that unilaterally terminates (No MR) the defined benefit pensions and one where the board formally discloses the change in outside director compensation via a management resolution (MR). ^c T-statistics appear in parentheses. ^d

Variables	1 No plan n = 45	2 Plan n = 124	3 Retain n = 58	4 Terminate n = 41	5 No MR n = 22	6 MR n = 19
(Difference in means)		(1–2)		(3–4)		(5–6)
Panel A: External pressure						
Percent shares owned by non-block institutions	55.96 %	61.43 % (–1.95*)	61.28 %	63.84 % (–0.81)	65.28 %	62.18 % (0.60)
Number of institutional investors (non-blockholders)	559.82	658.75 (–1.70*)	618.14	747.78 (–1.90*)	816.14	668.63 (1.47)
Percent shares owned by blockholders	16.22 %	11.70 % (1.91*)	11.42 %	11.06 % (0.12)	9.16 %	13.27 % (–0.90)
IRAA Target	8.89 %	11.29 % (–0.44)	6.90 %	24.39 % (–2.51**)	22.73 %	26.32 % (–0.26)
Percent dollar value of takeover activity	2.93 %	4.28 % (–1.83*)	4.24 %	4.42 % (–0.19)	0.03 %	0.06 % (–1.89*)
Panel B: Internal governance						
Percent shares owned by inside directors	6.95 %	1.86 % (2.41**)	2.14 %	0.46 % (2.32**)	0.35 %	0.59 % (–2.06**)
Percent shares owned by outside directors	1.87 %	0.84 % (0.91)	0.22 %	1.77 % (–1.37)	0.11 %	3.70 % (1.50)
Board size	10.96	12.08 (–2.81**)	11.62	12.32	12.59	12.00 (0.95)

Table 1. (cont.)

Variables	1 No plan <i>n</i> = 45	2 Plan <i>n</i> = 124 (1–2)	3 Retain <i>n</i> = 58	4 Terminate <i>n</i> = 41 (3–4)	5 No MR <i>n</i> = 22	6 MR <i>n</i> = 19 (5–6)
(Difference in means)						
Percent inside directors	29.35 %	20.68 % (4.07***)	22.41 %	18.13 % (2.29**)	19.20 %	16.90 % (0.90)
Percent outside directors	65.62 %	73.99 % (–3.88***)	72.50 %	74.91 % (–1.01)	73.53 %	76.52 % (–0.83)
CEO is Chairperson	68.89 %	91.13 % (–2.99***)	91.38 %	92.68 % (–0.23)	90.91 %	94.74 % (–0.46)
Tenure of CEO (years)	14.64	9.63 (3.18***)	10.52	8.27 (1.67*)	9.91	6.37 (1.91*)
Tenure of inside directors (years)	13.45	9.75 (3.75***)	10.35	8.68 (1.59)	9.13	8.15 (0.63)
Tenure of outside directors (years)	8.33	8.35 (–0.05)	8.36	8.47 (–0.24)	9.25	7.57 (2.79***)
Age of outside directors	62.07	60.65 (2.08**)	60.91	60.89 (0.05)	61.52	60.16 (2.01**)
Panel C: Outside director compensation ^e						
Total retainer (1995)	\$28,447	\$30,434 (–0.92)	\$29,821	\$31,576 (–1.68)	\$34,601	\$28,026 (1.59)
Total retainer (1996)			\$29,821	\$36,246 (–2.18**)	\$36,732	\$35,683 (0.20)
Percent retainer equity based (1995)	5.19 %	11.90 % (–1.95**)	7.43 %	20.98 % (–2.48**)	21.01 %	20.79 % (0.02)
Percent retainer equity based (1996)			6.99 %	38.75 % (–5.11***)	31.37 %	47.29 % (–1.36)

Restricted stock	31.11 %	68.55 % (−4.61***)	63.79 %	80.49 % (−1.81**)	95.45 %	63.16 % (2.64**)
Stock options	55.56 %	32.52 % (2.76***)	33.33 %	26.83 % (0.68)	9.09 %	47.37 % (−2.87***)
Panel D: Economic determinants						
Log of sales in 1995	8.50	8.92 (−2.17**)	8.79	9.21 (−1.99**)	9.27	9.15 (0.38)
Market-to-book (1995)	2.88	3.67 (−2.06**)	3.80	4.01 (−0.26)	3.36	4.81 (−1.36)
Property, plant & equipment/sales	77.06 %	101.00 % (−1.54)	103.16 %	87.80 % (0.84)	94.86 %	79.63 % (0.59)
Return on assets (EBITDA/Total Assets)	4.73 %	5.44 % (−0.82)	5.69 %	5.77 % (−0.09)	6.12 %	5.33 % (0.60)
Standard deviation (EBITDA/Total Assets)	2.59 %	2.16 % (0.75)	2.07 %	2.28 % (−0.45)	1.96 %	2.68 % (−0.89)
Stock returns (1993–1995) (daily) (includes dividends)	0.06 %	0.07 % (−1.23)	0.06 %	0.07 % (−0.16)	0.06 %	0.07 % (0.78)
Volatility of daily stock returns (1993–1995)	1.84 %	1.55 % (2.95***)	1.55 %	1.48 % (0.71)	1.47 %	1.50 % (−0.33)

^a Six proxy mailings and stockholder meetings are in 1995. Of the final sample of 169, 93.49% of the proxies are mailed during February through April of 1996 with corresponding stockholders' meetings taking place during February through June of 1996. Five proxies are mailed later in 1996 with one stockholder meeting occurring in January of 1997.

^b Restricting the sample to firms that have a quid-pro-quo exchange of outside directors' defined benefit plans for equity compensation and firms that did not simultaneously alter top executive and outside director incentive plans during the proxy season reduces the 124 firms with pension plans to 99.

^c ***, **, and * indicate statistical significance at the 1, 5, and 10 percent levels, respectively.

^d Due to the potential for a difference in the variances of the two samples, we first test for a significant difference in the variance. On the basis of a 10 percent significance level of this test we choose the appropriate t-statistic using pooled variances or Satterthwaite's adjusted t-statistic for unequal variances.

^e The figures in this panel are from the 1995 proxies unless otherwise noted.

terminating the defined benefit pension pay their outside directors a significantly higher retainer, they required directors to have a significantly higher percentage of the retainer in the form of equity compensation, with a significantly greater use of restricted stock, prior to the decision. The increase in the percentage of the retainer required to be in equity increases from roughly 21% to 39% and 47% for firms not using management resolutions and those that do, respectively. The use of the management resolution may reflect the desire to prevent any concerns regarding self-dealing by the board.⁹

Our last category of explanatory variables, reported in Panel D, is economic variables. We employ economic and firm performance variables similar to those that have been used by Core, Holthausen, and Larker (1999) and others. Firms with defined benefit pensions for their outside directors tend to be larger, measured as the log of 1995 sales. The higher market-to-book ratio of firms with defined benefit pension plans may reflect market power or growth opportunities with the lower volatility of stock returns suggesting market power. For firms shifting their outside director compensation, the only significant economic variable is log of sales, which shows that these firms are larger than those electing to stay with defined benefit pension plans. Disclosure of the decision to terminate the outside directors' pension plan via management resolution is not explained by the economic determinants described in Table 1.

5 Logistic regression results

We estimate through logit analysis the probability that firms can be categorized into one of the classifications defined by our sub-sample of firms and what characteristics are significant in correctly classifying firms according to these groups. The logit regression results are supportive of the univariate analysis.¹⁰ We also test for the determinants of effective board monitoring by examining the firm's decision to alter outside director compensation from a defined benefit pension plan to a compensation system with increased equity. The question is whether we can explain this shift in compensation within the context of economic, external pressure, and/or governance determinants.

⁹ The compensation committee is typically composed of outside directors. Thus there may be a conflict of interest in the determination of the value of the pension plan in terms of its equity-based incentive equivalent. Usually compensation is considered an issue of ordinary business and does not need shareholder approval. However, the Delaware Chancery Court, among other courts, make an exception in the case of a self-dealing situation. The situation of outside directors determining their own compensation may be just such a situation. As a result of using a management resolution not only is more information revealed in the proxy but every investor's attention is drawn to the change in outside director compensation. Thus, we would expect that firms that formally change the compensation system through a proxy vote are not only making a very public statement but may also be protecting themselves against any charges of self-dealing.

¹⁰ In the determination of the logistic analysis presented in this section, several different models were run. Additional variables consistently remained insignificant across models; for example the use of restricted stock or stock options. Furthermore, with the exception of those tests specifically mentioned, chi-square tests of one model against another indicated no significant improvement over the model presented in Table 2. Additional variables increase the multicollinearity and reduce the power of the model tested. Hence, in the interest of brevity and relevance to the issues focused on in this paper, these results are not formally presented.

Pension plan versus no pension plan

The logit regression presented in the first column of Table 2 for firms with and without defined benefit plans for outside directors indicates the model correctly classifies 67.51% (p-value $\cong 0$) of the firms. Similar to the univariate results, firms with defined benefit pension plans for outside directors have a significantly greater percentage of the firms' shares owned by institutions. These plans are more likely to be used when the tenure of inside directors is shorter and outside directors are younger. This is consistent with the human resource argument that defined benefit pensions can be used to attract, retain, and retire high-quality employees. The chief executive officer is also more likely to be the chairman of the board when there is a defined benefit plan. However, firms that reward outside directors with a defined benefit pension are more likely to require that a greater percentage of the retainer be used to purchase some form of the firm's equity. Thus, there appears to be an attempt to offset any potential agency conflict by requiring a larger percentage of outside director compensation to be invested in equity.

Terminate versus retain pension plan decision

The logit regression presented in the second column of Table 2 for firms terminating a defined benefit pension for outside directors and firms that do not indicates the model correctly classifies 56.17% (p-value $\cong 0$) of the firms. We find firms are more likely to shift from a defined benefit pension to equity compensation when faced with greater external pressure based on the greater probability that the firm is targeted by the IRAA. These companies being externally pressured to switch the compensation plan have larger boards and a greater percentage of the outside directors' retainer must be invested in a form of corporate equity.

To test for the relative contribution of the four explanatory variable categories in Table 2, we test whether certain categories of variables significantly improve the overall model. Given the significance of the external pressure variables, we test whether internal governance (including outside director compensation) and firm economic determinants significantly add explanatory power to the model. The chi-square statistic for adding the governance variables is 49.29 (p-value $\cong 0$) indicating these variables do add power to the external pressure variables. The chi-square statistic for adding the variables in the economic category is 1.84 (p-value = 0.996), indicating they do not add explanatory power to the model. Hence, we conclude that external pressure, internal governance structure, and the percent of outside directors' equity-based compensation in the retainer are significant factors in determining the probability of whether outside directors' compensation will shift from a defined benefit pension plan to greater equity compensation.

Management resolution decision

The change in outside director compensation suggested by the compensation committee is either unilaterally changed at the board level or voted on by shareholders

Table 2. *Logistic regression results for changes in the structure of outside directors' compensation*

The first logistic regression is standard. The three right columns report results from generalized logistic regressions. Hence, the regression between those firms retaining versus terminating outside director defined benefit pension plans is conditional on the firm having such a plan. The reference group is firms without a pension plan. The terminate sub-sample is divided into a group that unilaterally terminates (No MR) the defined benefit pensions and a group where the board formally discloses the change in outside director compensation via a management resolution (MR). The estimates for the two groups are simultaneously estimated conditional on the plan being terminated. The reference group is firms retaining the pension plan.^a

Variables	Plan versus no plan	Terminate versus retain plan	No MR versus retain plan	MR versus retain plan
Intercept	7.49	0.99	-9.48	11.03
<i>External pressure</i>				
Percentage shares owned by non-block institutions	6.43***	4.77	3.88	5.16
Percentage shares owned by blockholders	0.90	0.80	2.06	1.94
Acquisition activity	17.55*	-7.84	-32.18*	7.85
IRAA target	-	2.60**	3.93**	1.04
<i>Internal Governance</i>				
Percentage shares owned by inside directors	1.65	-62.69	-472.10**	-23.03
Board size	0.19*	0.37*	0.45*	0.32
Percentage of inside directors	-3.86	-3.21	2.50	-6.16
Mean tenure of inside directors (years)	-0.08*	-0.02	0.02	-0.02
Mean age of outside directors (years)	-0.21**	-0.17	-0.01	-0.34*
CEO is Chairperson	1.91***	0.26	0.33	-1.10
<i>Outside director compensation^b</i>				
Total retainer	-0.00	0.00	0.00	0.00
Percentage of retainer equity based	3.18**	5.00***	4.66***	5.41***
<i>Economic determinants</i>				
EBITDA	0.00	0.00	0.00*	0.00
Sales	-0.00	-0.00	-0.00*	-0.00
Market to book equity value	0.07	-0.00	-0.05	0.00
Property plant and equipment to sales	0.22	-0.11	-0.81	-0.06
Standard deviation of ROA (EBITDA/Total Assets)	-0.08	-0.02	-0.57	0.13
Stock returns (1993-1995) (including dividends)	0.71	1.03	1.10	0.66
Standard deviation of stock returns (1993-1995)	-49.92	46.16	93.37	39.82
Number of observations	158 ^c	99	80	78
Likelihood ratio	67.51	56.17	85.51 ^d	
p-value	(0.000)	(0.000)	(0.000) ^d	

^a ***, **, and * indicate statistical significance at the 1, 5, and 10 percent levels, respectively.

^b This variable is calculated using 1995 proxies for the No Plan and Plan samples. The Retain, Terminate, No MR and MR samples use 1996 proxies to calculate the percentage of retainer that is equity based. Using only 1995 proxy figures does not materially affect the models or conclusions.

^c The sample size declines from 169 to 158 due to the requirement that there are no missing variables.

^d There is only one likelihood ratio and p-value because both sub-samples are conditioned on one reference category, i.e., firms retaining the pension plans.

as a management resolution.¹¹ Regardless of the method used to terminate the defined benefit pension plans, firms terminating plans require a higher percentage of equity-based compensation for outside directors when compared to firms retaining the plans. Conditional on terminating the plan, determinants of the choice of using a management resolution or changing the plan unilaterally are tested in the latter two columns of Table 2. A generalized logit¹² is used with the sample retaining plans defined as the reference group for the two methods of terminating the pension plan. Each category is contrasted against the reference category. For example, conditional on having a pension plan, the analysis determines what variables are significant in the decision of how to terminate the pension plan.

Unlike firms that directly communicate the change to stockholders via a management resolution, firms unilaterally terminating the plans are more likely to be IRAA targets relative to firms retaining the plans. Similar to the terminate-retain analysis, we test the significance of the variable categories being added to the model. Specifically, we examine whether internal governance, including outside director compensation, and firm economic determinants add power to the model with just external pressure. The chi-square statistic for adding the internal governance variables is 37.24 (p-value \cong 0.000) indicating the internal governance variables add explanatory value just as in the terminate-retain model. The chi-square statistic for the incremental addition of firm economic variables is 11.09 (p-value = 0.679), reinforcing the lack of significance of the economic variables in the decision to terminate or the method of termination, of defined benefit pension plans.

Shareholder activism may be a mechanism to get a 'foot in the door' to create a dialog with management as a way to encourage changes within the company. The results here suggest that, when firms are pressured by groups representing investors such as the IRAA, management or outside board members propose to unilaterally terminate the defined benefit pension. The decision by firms targeted by IRAA not to seek a shareholder vote may reflect a close level of contact this organization has with targeted firm management. This contact may mitigate the threat of a shareholder resolution, which is voided when management agrees to acquiesce to the IRAA request. This form of action is evident in the letters from management we obtained from the IRAA.¹³

6 Empirical results of stock return and accounting performance measures

In the univariate and logit analyses, measures of stock return and accounting performance are included. In this section more specific and direct tests of the stock return and accounting performance measures are conducted.

¹¹ The SEC has ruled that shareholder votes have value and institutional shareholders are required to vote the shares held or be considered derelict in their duties. Thus, as a result of using a management resolution not only is more information revealed in the proxy but every institutional investor knows of the removal of the plan.

¹² For an overview of generalized logit analysis, see Agresti, *Categorical Data Analysis*, John Wiley & Sons (1990).

¹³ Examples include excerpts from letters to the IRAA that announce the targeted firm is unilaterally withdrawing its defined benefit pension: 'Based on this letter, you will fax me your letter withdrawing your shareholder proposal' (Sunoco); 'I appreciate your willingness to withdraw your proposal based on our conversation and this letter' (Westinghouse Electric Corporation).

Table 3. *Tests of significant excess stock return and accounting performance*

The performance benchmark is the sample firm's median stock return or accounting performance measure for firms in the sample firm's industry defined by the two-digit SIC code. One group of firms (No plan) did not compensate outside directors with a defined benefit pension plan, while the other group (Plan) did. From the sub-sample of firms (Plan) that used the defined benefit pension for outside directors, one group continued (Retain) the plan and the other group (Terminate) terminated it in exchange for additional equity compensation for the outside directors. The 'Terminate' sub-sample is divided into a group that unilaterally terminates (No MR) the defined benefit pensions and one where the board formally discloses the change in outside director compensation via a management resolution (MR).^a

Panel A: Average excess stock returns relative to a sample firm's industry.^b Calendar years are used.

Sample	Average excess return (t-statistic)		
	1993–1995	1996–1998	1996–1998 less 1993–1995
Plan	–0.04 % (–2.79)***	0.00 % (0.06)	0.04 % (2.11)**
No plan	0.05 % (2.75)***	–0.00 % (–0.01)	–0.05 % (–1.86)*
Terminate	–0.03 % (–1.60)	0.05 % (1.81)*	0.08 % (2.65)**
Retain	–0.04 % (–2.28)**	–0.03 % (–1.35)	0.02 % (0.65)
MR	–0.03 % (–0.99)	0.01 % (0.25)	–0.05 % (0.77)
No MR	–0.04 % (–1.61)	0.05 % (1.48)	0.09 % (2.84)***

Panel B: Average excess accounting returns relative to a sample firm's industry.^c Fiscal years are used.

Sample		Average excess accounting performance measure (t-statistic)		
		1993–1995	1996–1998	1996–1998 less 1993–1995
Plan	ROA	4.00 % (6.33)***	4.78 % (6.81)***	0.79 % (2.72)***
	ROE	0.30 % (8.43)***	0.27 % (6.78)***	–0.02 % (–0.71)
No Plan	ROA	1.67 % (2.20)**	2.06 % (2.24)**	0.38 % (0.60)
	ROE	0.20 % (3.34)***	0.12 % (4.31)***	–0.08 % (–1.29)
Terminate	ROA	3.86 % (3.78)***	4.87 % (4.04)***	1.02 % (2.17)**

Table 3. (cont.)

Panel B: (cont.).

		Average excess accounting performance measure (t-statistic)		
		1993–1995	1996–1998	1996–1998 less 1993–1995
Sample	ROE	0.29 % (5.37)***	0.30 % (7.59)***	0.00 % (0.07)
	ROA	4.09 % (5.05)***	4.72 % (5.48)***	0.64 % (1.73)*
Retain	ROE	0.30 % (6.47)***	0.25 % (4.18)***	−0.04 % (−0.96)
	ROA	3.74 % (2.33)**	5.64 % (3.12)***	1.91 % (3.53)***
MR	ROE	0.26 % (6.42)***	0.41 % (5.94)***	0.15 % (3.00)***
	ROA	3.93 % (2.93)***	4.40 % (2.72)**	0.43 % (0.62)
No MR	ROE	0.31 % (3.67)***	0.22 % (5.35)***	−0.09 % (−1.01)

^a ***, **, and * indicate statistical significance at the 1, 5, and 10 percent levels, respectively.
^b Stock returns are adjusted for distributions, stock splits, and dividends.
^c ROA is EBITDA/Total Assets and ROE is EBITDA/Common Shares. Other definitions result in qualitatively the same results.

Two three-year periods are defined. The first period is the three calendar years prior to the proxy season and the second period is the three subsequent calendar years. Three measures of performance are used. The market-based return measure is the average excess return of the firm’s equity over the period, where the excess return is defined as the actual firm return minus the return of the median firm in the sample firm’s industry defined by a two-digit SIC code. Similarly, the two accounting performance measures, ROA (EBITDA/Total Assets) and ROE (EBITDA/Common Shares), are the average of the sample firm’s respective performance measure, i.e. ROA, less the sample firm’s two-digit SIC code industry median performance of that measure.^{14,15} The results are presented in Table 3 with Panel A presenting stock return performance and Panel B accounting measure performance. Firms with a pension plan have significantly negative average excess returns during the 1993–1995 period, while firms without pension plans have significantly positive average excess returns during the same time period. Firms terminating the pension plans during

¹⁴ In the calculation of the industry median benchmark the sample firm is excluded.
¹⁵ Clarke (1989) shows the two-digit SIC definition captures firms’ similarities as well as three- and four-digit definitions.

the 1995–1996 proxy season have a significant increase in stock return performance from the 1993–1995 to the 1996–1998 period, while those firms keeping the pension plans do not; although in the latter period firms keeping the pension plans no longer have significantly negative excess returns.¹⁶ In Panel B, where the accounting performance measures are reported, every sample of firms in both periods perform significantly above the respective medians in their two-digit SIC code industry for both measures, ROA and ROE. There is some significant improvement in accounting measures of performance from the 1993–1995 to 1996–1998 period in the plan, terminate and MR samples. More specifically, the sample terminating the pension plan through a management resolution has significant improvement in both the ROA and ROE performance measures. This is also the sample with the greatest increase in the percentage of the retainer required to be invested in equity (21% to 47%).

The stock return performance during the period prior to the 1995–1996 proxy season indicates institutional investors and investor rights groups could associate pension plans as providing a disincentive for outside directors to have their interests aligned with shareholders. Given accounting performance measures indicate superior performance, the institutional investors and investor rights group appear to be focused on stock return performance and not accounting performance measures. There is a significant increase in the stock return performance of those firms terminating the pension plans for a quid-pro-quo increase in equity compensation, which is not observed for those firms retaining pension plans. This finding supports the contention made by some investors that defined benefit pension plans for outside directors misaligns outside directors' interests with management.

7 Summary and conclusions

Considerable research on the governance structure of non-financial firms focuses on the role of the board of directors as a monitoring body assumed to have interests aligned with stockholders. However, the effectiveness of the board of directors has been increasingly questioned by various parties including NASDAQ, NYSE, and the SEC. One form of compensation for outside directors has been defined benefit pension plans. The quid-pro-quo exchange of these plans for more equity compensation for outside directors allows testing whether the compensation structure for outside directors is not only commensurate with this goal of alignment with shareholders' interests, but also leads to effective governance of the firm measured in terms of operating and/or market-related firm performance.

We provide insight into the role of external pressure in affecting the relation between firm internal governance and managerial decision making. Our results indicate that firms with outside director pension plans were using equity as an alignment tool, but were still pressured to terminate the plans. External pressure in the form of investor rights groups (IRAA) and internal governance and not

¹⁶ All firms in our sample terminated their outside director defined benefit pension plans by 1999, consistent with outside directors' incentives changing over the subsequent years to be more aligned with equity holders.

takeover risk and/or institutional shareholders provides the force for this change in compensation. Firms with pension plans underperform their industry in terms of stock return performance. Based on our results, when a sample of firms are driven by external pressure to terminate defined benefit pension plans for outside directors in favor of increased equity compensation, firm stock performance improves significantly. Our findings show that terminating outside director pension plans improved governance effectiveness of outside directors. This is evidenced by the significant stock return underperformance of firms with pension plans and the significant increase in equity returns subsequent to the quid-pro-quo substitution of equity-based compensation in lieu of defined benefit pension plans.

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