THE RESPONSE OF THE LABOR MARKET TO MANAGERIAL ENTRENCHMENT: EVIDENCE FROM POISON PILL ENACTMENTS

A Dissertation

by

JOSEPH JEROME REISING

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 1995

Major Subject: Finance

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Approved as to style and content by:

D. Scott Lee (Chair of Committee)	Albert Cannella (Member)
David Ellis (Member)	Raymond Battalio (Member)
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ABSTRACT

The Response of the Labor Market to Managerial Entrenchment: Evidence from Poison Pill Enactments. (August 1995)

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In a well-functioning labor market, managers whose interests diverge from shareholder interests should lose their positions more often than managers whose interests converge with shareholder interests. I use the market reaction to poison pill announcements to differentiate managers and directors who work in the best interests of shareholders from their peers whose actions appear to diverge from shareholder interests. These groups are studied for differences in turnover and re-employment in the years following the poison pill announcement. The standardized prediction errors from Brickley, Coles and Terry (1994) are analyzed to determine if turnover is related to the signs of the residuals. The methodologies used to analyze the turnover rates include non-parametric tests of difference in means and medians, ordinary least squares regressions, multi-stage regressions to account for simultaneity of the regressors, probit regressions to account for the discreteness of the data and right censored regressions to account for the observations being cut off after three

years. The control variables include manager age, the existence of shareholder proposals, shareholder lawsuits, takeover attempts, corporate restructuring, and proxy fights. The results indicate that labor markets remove top managers and directors from their positions more often when they adopt value-reducing poison pills. Further the top managers and directors also lose more seats on other boards and top managers are less likely to be re-employed at a similar position within three years of losing their current position.

DEDICATION

This dissertation is dedicated to my family who made it all possible. This is for my parents Diane and Jerome for instilling in me a desire for education. It is also for Virginia who is like a mother to me. And finally for Judy and Shelby who supported me during my trials and tribulations. Without their support, I could never have completed this work.

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CHAPTER I

INTRODUCTION

Top managers and directors of a firm are subject to the scrutiny of both the internal and external labor markets. Effective labor markets should remove top managers and directors who diverge from the best interests of the shareholders. However, managers may attempt to impede the labor markets by adopting corporate charter amendments.[1] If managers successfully entrench themselves in the firm, diverging from the interests of shareholders will not lead to higher manager turnover. Poison pills are one such defense allowing managers to entrench. Poison pills have been singled out, in particular, because they do not require shareholders to approve their enactment.

Anti-takeover defenses allow managers to resist future takeover bids. However, this resistance may be used to either increase shareholder wealth by extracting larger takeover premiums or to entrench incumbent managers.[2] Ryngaert (1988) and Brickley, Coles, and Terry (1994) detect positive market responses for about 45% of their poison pill announcements. Brickley, Coles, and Terry (1994) relate the share price reactions around

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This dissertation follows the style of the Journal of Financial Economics.

[1] These defenses include not only poison pills, but also shark-repellents such as fair price amendments, supermajority rules, boards with staggered multi-year terms. Rules on written consent, and rules on when and where votes for control can occur are also common ways to hinder the market for corporate control. Dummy variables were used to indicate the presence of such shark-repellents, both individually and as a group, but the coefficients were not significant

[2] As noted on page 839 of Brealey and Myers (1991).

poison pill announcements to the monitoring performance of the board of directors.[3] I employ the stock price reactions around poison pill announcements as a proxy for top manager and director performance. If the reaction is positive, I assume managers and directors are acting in the shareholders best interest when they adopt a poison pill. I interpret a negative share price reaction as contrary to shareholder interests.[4] I find an inverse relationship between the share price reaction to poison pill announcements and the turnover of top managers in the three subsequent years. For the firms with a negative share price reaction, also called divergent firms, turnover rate per year is 12.50%, while annual turnover is 7.61% per year for firms that experience a positive share price reaction, also called convergent firms, upon adoption of a poison pill. The divergent top managers also are classified as having involuntarily left the firm at a higher rate than convergent managers. The poison pills do not appear to stymie the market for managerial labor.[5]

Top managers apparently bear a heavy cost when losing their position. None of the fifty-seven top managers in the divergent sample held a senior position in any exchange-listed company three years after losing his job. In contrast, nine percent of the managers in the convergent sample regained a senior position in an exchange listed firm in the same time interval.[6] Also more divergent top managers left the labor market than did convergent managers in the three years after turnover.

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[3] They find that the presence of outside directors, and in particular professional directors, influences the reaction to the poison pill adoption.

[4] In the dissertation I will use masculine pronouns to refer to members of the board or top managers. There were no female top managers in the sample and boards of directors rarely contained more than one woman. Indeed many boards had no female on their board.

[5] Comment (1985) finds the turnover rate of the population of top managers lies between the rate of turnover of convergent managers and divergent managers.

[6] Comment (1985) finds an average reemployment rate of eleven percent over three years.

In chapter II below, I outline my hypothesis concerning the effectiveness of the internal and external labor markets. In chapter III I examine the literature on poison pills and on top manager and director turnover. I describe my sample and provide summary statistics in chapter IV. My methodology is in chapter V, and my results in chapter VI. I conclude the dissertation in chapter VII with a summary of my results and their importance.

CHAPTER II

HYPOTHESES

The Extent of Labor Market Effectiveness

When managers and directors fail to maximize shareholder wealth, shareholders can either sell their shares or motivate managers to act in shareholders' interests. In a well functioning labor market, managers who fail to act in shareholders' interests not only lose their current positions, but will also tend to lose their current seats on boards of other commerical firms. The monitoring may be either the internal or external labor market.

Managers may attempt to inhibit the function of labor markets by adopting corporate charter amendments that increase shareholders' costs of removing the incumbent managers. Entrenchment strategies may involve the adoption of poison pill amendments, suggesting that shareholders will regard an announcement that a firm is adopting a poison pill as unfavorable news. However, announcements of a poison pill adoption may be favorably received if they reveal an impending takeover or improve the target board's ability to bargain for a better premium for their shareholders contingent on a bid occuring.

In light of the disparate motives for adopting these amendments, shareholders' reaction to a poison pill announcement provides a useful barometer of how the market expects the managers to use the poison pills. When the value of a firm falls on announcement of a poison pill, shareholders apparently expect the entrenchment costs to outweigh any benefits

from increased bargaining power. When the value of a firm rises on announcement of a poison pill, shareholders expect the benefits of greater bargaining power to outweigh entrenchment costs.

In a well-functioning labor market, negative assessments of managers' motives should increase the probability that managers and directors will lose their jobs. However, value-decreasing poison pills may be such effective entrenchment devices that the probability of subsequent job loss remains unchanged or even declines for top managers and directors. Hence the Managerial Entrenchment Hypotheses, the Homogeneous Manager Hypotheses, and the alternate hypotheses.

Internal Labor Market

Internal Labor Market Effectiveness Hypothesis

I propose a hypothesis of internal labor market effectiveness stating that the internal labor market penalizes top managers and directors who reduce firm value. Specifically, managers and directors who adopt value-reducing poison pills will experience a reduction of their reputation in the internal labor market. The hypothesis predicts that top managers and directors who adopt value-reducing poison pill amendments will lose their job more often than managers and directors who adopt value-increasing poison pills. Although the enactment of poison pill amendments provides information about the top managers and directors,[7] shareholders will have also have some prior beliefs about managerial behavior.

[7] Although moitoring managers is one of the board's primary responsibilities, many authors such as Monks and Minow (1995) have argued that boards are not particularly effective monitors. Allowing the adoption of a value-reducing poison pill not only restricts the ability of forces outside the firm to discipline managers but also suggests the inside forces on the board may not provide effective discipline of top managers.

The market reaction to enactment of a poison pill is determined by the information released conditioned on the prior beliefs of the shareholders. All else equal, a prior belief that managers are likely to enact a poison pill in order to entrench themselves will lead to an unfavorable shareholder reaction in the event of the firm enacting a poison pill. If, however, the market believes managers are likely to enact a poison pill in order to increase the premia from potential takeover bids, the shareholders should react more favorably.

In order to use the market's beliefs about the quality of managers, I use the reaction to poison pill announcements as a proxy for top manager and director behavior. Announcements of value-reducing poison pills will result in increased job loss for the top managers and directors, as the reduction in value from poison pill enactment means the top managers and directors tend to diverge from the interests of shareholders.

I further expect a difference in turnover among different types of directors. Outside directors exist primarily to monitor and should have the largest difference in turnover when they do not monitor effectively. Grey directors, directors who are neither inside or outside directors, serve on the board may serve on the board either for their expertise, for monitoring purposes, or for both reasons. If they serve on the board to provide their expertise, there is a cost of eliminating inside and grey directors. This cost is the cost of lost expertise or lost relations with other firms.

Conversely, outside directors serve the primary purpose on the board of monitoring. If the outside directors monitor poorly, the cost of replacements is very low. Therefore, the turnover of outside directors in the divergent sample should be higher than the rate of turnover in the convergent sample. The turnover of other directors, inside directors and

grey directors, may not be significantly higher because of the expertise they possess. The rate may be either higher or lower depending on the usefulness of the expertise.

Managerial Entrenchment Hypothesis

The managerial entrenchment hypothesis, states that top managers and directors who reduce firm value succeed in entrenching themselves in that they cannot be removed by the labor markets. If the managerial entrenchment hypothesis holds, top managers and directors who adopt value-reducing poison pills will experience no greater job loss than their counterparts who adopted value-increasing poison pill amendments. There should be no difference in the turnover rates despite managerial behavior that reduces shareholder wealth.[8]

A further question is whether boards or other control mechanisms discipline managers. If poison pills fail to insulate managers from outside influences, the top managers will lose their positions to external monitoring mechanisms such as shareholder lawsuits at a higher rate than those adopting value-increasing poison pills. If poison pills fail to insulate managers from their own board, a more negative reaction to a poison pill adoption will be associated with higher top manager turnover after controlling for pressure variables such as takeovers, lawsuits, proxy fights, proposals and restructurings. Further, if this higher top manager turnover is associated with higher director turnover,[9] it would appear that pressure

[8] A particularly powerful example of managerial divergence can be found in Burrough and Helyar (1990) where they describe the perks of the RJR Nabisco Chief Executive Officer.

[9] Short of not voting for them, there is little an individual shareholder can do to cause a director to leave the board. A concerted effort by large or vocal shareholders, however, can apply enough pressure to encourage a director, on the margin, to leave the firm. Further, if a director has his reputation on the line he may decide to leave a firm that is operated poorly rather than vote against management.

is being applied to the directors to monitor managerial behavior. If the top manager turnover is not associated with a higher level of turnover among directors, it would appear that directors are acting as effective monitors without heavy pressure being applied to the board by shareholders or other outside forces.

External Labor Market

External Labor Market Effectiveness Hypothesis

I also propose an external labor market effectiveness hypothesis stating that external labor market penalizes managers and directors who do not maximize shareholder value. Specifically, managers and directors who adopt value-reducing poison pills will experience a reduction of their reputation in the external labor market. If the hypothesis holds, top managers and directors who adopt value-reducing poison pill amendments will lose seats[10] on other firms' boards[11] more often than top managers and directors who adopt value-increasing poison pills. The external labor market effectiveness hypothesis also predicts that when top managers leave their current firm, their probability of re-employment will be

[10] I assume cumulative seats on other boards represents some measure of director reputation. This reputation, however is cumulated over the director's past in a managerial labor market that appears to have sticky adjustments. Therefore, the seats held may be a lagged indicator of director quality. There may thus be a link between the number of seats and expected future behavior. The evidence suggest that larger firms have more interlocks with other boards. This supports the arguements that some firms are central in the labor market and others are ancilliaries. Additionally the greater number of outside and grey directors on the board, the more seats the other members of the board can gain by "exchanging" open director positions. Seats are also reported in the three-stage regression results as the equation that is used for cross-explanation of error terms.

[11] As there are cross-holdings of seats on other boards, turnover of a director on one board may be seen as a seat change for a different board. Indeed a seat loss on one board may have a multiple effect if it is counted as a seat loss for many different boards. This is not a problem for the current hypotheses unless the board cross-holdings are concentrated in firms experiencing either positive or negative standardized prediction errors. If there is a concentration, any differences may be exaggerated. I used a chi-squared test for differences in probability and found no significant difference in the probability of a convergent seat loss or a divergent seat loss when multiple losses occurred.

higher if they are in the convergent sub-sample. Finally the outcome for different types of directors will vary. Outside directors usually have a portfolio of directorships and losing any one directorship is not a strong signal to the market and indeed the signal may be dwarfed by signals from the other boards the directors sit on. Grey directors tend to have fewer board seats and thus loss of a seat may have a greater impact on the judgement of the external labor market. As there are costs to the firm of eliminating a grey director, the external market may judge the grey director on a divergent board to be a poor monitor even if the director is retained by the firm. Therefore, a low reputation grey director should expect to lose seats from boards where the firm derives the lowest benefits from the relations and expertise the grey director brings to the position. Similar results are expected with inside directors, directors with some alternate connections to the firm. Inside directors also hold few seats, and being a poor director may not turn up as a firing that costs the firm a great deal of expertise, but as a loss of seats on other boards where the cost of eliminating the director is lower. Therefore, outside directors should expect fewer repurcussions in the external labor market than grey directors and particularly inside directors.

Homogeneous Manager Hypothesis

I propose the homogeneous manager hypothesis as an alternative to the external labor market effectiveness hypothesis. The homogeneous manager hypothesis states that the external labor market does not successfully differentiate between managers and directors who act in the best interests of the shareholders and the managers and directors who do not. If the homogeneous manager hypothesis holds, top managers and directors who adopt

value-reducing poison pills will experience no greater change in labor market reputation than top managers and directors who adopt value-increasing poison pills. I test the homogeneous manager hypothesis by examining changes in the number of seats held on other boards of directors, and by examining the probability of managerial re-employment after losing a position. If the evidence supports the homogeneous manager hypothesis, the number of seats held on other boards and the number of seats lost or gained from those other boards will not be a function of the measure of managerial behavior. Furthermore the probability of reemployment will be the same for all managers.

Caveats

A potential pitfall of using the stock price reaction as a proxy for managerial behavior is that Comment and Schwert (1994) argue the announcement of a poison pill may release private information to the market. Their claim is the information effects will tend to increase the stock price as shareholders update their prior probability estimates of the likelihood of a takeover. If this is the case, some convergent firms may be misclassified. If such effects are systematic, the effect of the transformation on the parametric tests should be negligible. The non-parametric tests that are divided by the type of reaction should lose some power if firms are misclassified. However if the non-parametric tests are significant, they should be even moreso without the information release. Further, the information release should provide an update on the probability of a takeover offer, and the price conditioned on a successful takeover. While a poison pill may allow a higher conditional takeover price, the probability of a successful takeover may be lower. The primary

entrenching benefit of a poison pill is not to decrease takeover probability, but rather to discourage bids. Therefore, if a poison pill is adopted, shareholders must weight the increased probability of receiving a bid the managers revealed by enacting a poison pill against the lowered probability of a bid from the pill. I argue this decision goes back to managerial behavior. If managers diverge from shareholder interests they will enact poison pills that lower the probability of a bid. Managers whose interests converge with shareholder interests will be expected to use pills to discourage only low bids for the firm.

While the share price reaction to announcements of poison pill adoptions is an imperfect proxy for manager and director behavior, other proxies also have severe problems that limit their usefulness. Accounting measures of performance are subject to a host of problems including accounting manipulations, timing of reports, and *ex post* performance measures. Measuring manager quality by long-term share returns cannot separate manager-specific factors from non-management factors. Long-term share returns also impound expectations of managerial replacement. These expectations can vary widely over time.

Using the reaction to an announcement other than poison pill adoption to proxy for manager quality would have many of the same problems as a study using poison pill announcements. Additionally, unlike poison pill announcements, many announcements suffer from being just one of a series of announcements for an event or from information leakage. Poison pills can be anticipated but do not require multiple announcements, nor do they require an extended period of time to emplace in the firm. Thus despite the problems of using stock price reactions, the share price reaction to the initial adoption announcement best reflects the market's assessment of the behavior of the firm's managers and directors.

CHAPTER III

OVERVIEW OF THE LITERATURE

Turnover

Top management turnover refers to job loss by a company's senior managers, generally focusing on the firm's Chief Executive Officer (CEO). Manager turnover can be either voluntary or involuntary. Voluntary turnover occurs when the top manager leaves the firm either to retire or to move to a new position with a different firm. Involuntary turnover occurs when the board of the firm forces the top manager to leave. The board may force a top manager to leave due to either poor managerial performance or mandatory retirement.[12]

When a firm performs poorly, the board and the top manager are more likely to lose their current positions. Warner, Watts, and Wruck (1988) find an inverse relation between a firm's share performance and the probability of director and top manager turnover. Furthermore, the poorest performing firms in the market will fall into financial distress. If the relation between turnover and performance holds, turnover should be much higher for firms in financial distress. Providing more evidence for the relation between turnover and performance, Gilson and Vetsuypens (1991) find higher turnover for top managers during financial distress. Top managers, however, do not work in a vacuum. If the firm performs

[12] All but one firm providing information on mandatory retirement of CEOs in their proxy statements had a mandatory retirement age of 65. From that evidence, and from examining CEO age in the proxy statements, it appears that the only major exceptions to an age 65 mandatory retirement are found in family-run firms. Directors often also have mandatory retirement. Director retirement, however, usually occurs at age 70 or 72.

poorly, it may be due to poor managerial decisions or to adverse events that affect the whole industry. Boards should not eliminate managers more often when systematic events (e.g., tax increases) reduce firm value. Consistent with systematic events not affecting job loss, Morck, Shleifer, and Vishny (1989) find that boards judge firm performance relative to industry performance.

When the firm performs poorly due to value-reducing decisions by the top management, the board should also bear some responsibility for allowing top managers to make the decisions. Previous evidence suggests that the turnover of top managers and board members tend to coincide. Hermalin and Weisbach (1988) find when a CEO departs, board turnover also increases. From their results, it appears that poorer performing top managers tend to work for boards that do not monitor effectively.

The reputation for being an effective manager can influence future job opportunities. Directors and top managers have reputational capital at stake when serving with a firm, and markets re-evaluate the reputation of the director or top manager when they leave a position. If the director or top manager has worked in his own interests rather than the interests of shareholder, he may be less likely to find a new position. For a firm in distress, Gilson (1989) suggests top managers that leave the firm have a greatly reduced chance of finding another job. No top manager in his sample found a job with an exchange listed firm for up to three years after he left the distressed firm. Even if the firm is not in distress, Comment (1985) finds that only 13% of top managers who leave their firm find a similar position in the next three years. It is likely the loss of reputational capital may reduce the chance that managers will not work to benefit shareholders.

Although firms generally use mandatory retirement to ensure orderly succession, mandatory retirement may also be a low cost way to remove entrenched managers. If managers successfully entrench, they may be less likely to lose their position before age 65 than other managers. The internal labor market may use mandatory retirement as a pre-commitment device to remove entrenched managers when alternate methods cost too much. At the mandatory retirement date, no amount of entrenchment will allow managers to remain in their positions.[13] If more entrenched managers remain until forced to retire, the rate of mandatory retirement among entrenched managers will be higher than for other managers. The results of Weisbach (1993) suggest the internal labor markets do use mandatory retirement to reduce managerial entrenchment.

Wealth Effects of Poison Pill Adoption

Poison pills work by diluting the shareholdings of an owner who acquires a sufficiently large block of the firm's shares. If a poison pill is triggered, share rights (poison pill plans are often called shareholder rights plans) which are attached to the share can be redeemed for stock at a cost of a small fraction of the actual value. The individual causing the pill to be triggered, however, cannot redeem his shares. A successfully used poison pill will significantly cut the fraction of the firm the blockholder owns.

Poison pills were introduced in the early 1980's but were rarely enacted until the *Household International* decision on November 19, 1985 where the Delaware Supreme Court upheld a Chancery Court ruling providing the company the right to use a flip-over

[13]The board of one firm, however, voted to retain two founding family members as directors beyond the mandatory retirement age.

of the firm's voting shares, preferred shares not owned by the blockholder would have multiple votes. The first such plan was used by a firm included the sample for this study, ASARCO, that allowed fifty votes per share of preferred. Because it would be possible to own all common shares and still not have voting control, voting plans were eventually invalidated. Thererfore, future poison pill plans were of other types.

Preferred share plans were only emplaced by two non-sample firms, Enstar and Bell & Howell, both before 1984. With the preferred share plan, the firm distributes a dividend of convertible preferred shares. The preferred shares have one vote each and have a higher dividend than they would if they were converted to common stock. When a shareholder acquires a sufficiently large block, all other shareholders have the right to require the firm to redeem the preferred shares unless the firm is merged within three to four months. The redemption price is the highest price paid in the last year by the blockholder for either convertible preferred shares or for stock, controlling for the conversion ratio. If the firm is merged, the new preferred shares can be converted into the new firm's common shares. Back-end plans are more common than the first two plans. They were devised for Jerrico, anon-sample firm, in October 1984. The plan provides a rights dividend. Although most of the features are similar to the fourth poison pill plan, flip-overs, when someone acquires a large block of shares, individuals are allowed to exchange their shares for a more senior security valued at the back-end price fixed by the board. This right is invalidated if the blockholder offers to acquire all shares for at least the back-end price.

Flip-over plans are by far the most common type of poison pill. They were first used by the non-sample firm Crown Zellerbach in July 1984. The plans issue rights to accquire common or preferred stock at an exercise price set to remain well above the share price.

The right cannot be exercised until about ten days[15] after a blockholder acquires or bids for a preset level of the shares of the firm. After that time, the rights become exercisable and the firm, which could redeem the rights for a nominal amount, must distribute rights certificates to shareholders. If the acquirer merges with the firm, the rights flip-over and holders are able to purchase shares of the surviving firm at a significant discount. This discount is often half the market price. To cover the possibility that the acquirer will not merge the firm but rather transfer assets, pills starting with Johnson Controls in November 1984 contained a flip-in clause. If assets were transferred at a price lower than available from some other party, right holders other than the blockholder could purchase target shares as a significant discount. A different flip-in clause allows shareholders but not the large blockholder to purchase target shares at a significant discount if a blockholder exceeds a preset ownership level. Some research such as that of Malatesta and Walkling (1988), finds a significant wealth decrease for firms that adopt a poison pill. Other research, e.g. Comment and Schwert (1994), has found that shareholders appear to lose little wealth, on average, around a poison pill adoption. The ambiguity of the results appears to exists because there are at least two motives for adopting poison pills. While managers may use a poison pill to entrench themselves in the firm and reject takeover bids, they may also use the poison pill to extract a higher bid premium during a takeover contest. Managerial entrenchment tends to reduce shareholder wealth, but the increased bargaining power tends to increase shareholder wealth. The mixed results of poison pill research may derive from the inability to separate the entrenchment and bargaining motives.

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[15] This allows the board some discretion if a blockholder acquired too many shares of the company but did not intend to make a bid for the company. The provision is not irrelevant as companies have had poison pills triggered accidently.

Early studies reported that poison pills lead to a reduction in shareholder wealth, on average. Malatesta and Walkling (1988) find that average share prices fall on announcement of poison pills and attribute the reduction in firm value to managerial entrenchment. Although finding no significant effects for a large sample of poison pills, Ryngaert (1988) found shareholder wealth appears to decrease when known takeover targets adopt poison pills. On the other hand, Ryngaert also found that firms with poison pills defeat bids at twice the rate of other firms, and the associated boards of directors are more successful at increasing the bid premia offered for their firm. Over half of Ryngaert's sample firms eventually received a premium to the initial offer. Comment and Schwert (1994) found the premia received by firms with poison pill firms is, on average, 17.85% for successful bids.

The mixed evidence on the effect of poison pills suggests that both motives may lead to poison pill adoptions. Most poison pills reduce firm value but a large fraction of poison pills adopted by firms lead to increases in firm value. Both Ryngaert (1988) and Brickley, Coles and Terry (1994) report a positive reaction for roughly 45% of their poison pill sample. Though many top managers of firms use poison pills to entrench themselves, a significant fraction of the firms appears to use poison pills to benefit shareholders.

Caveats

Many factors besides poison pills influence managerial turnover. The factors include manager age, industry, blockholdings and the percentage of outsiders on the board of directors. It may be necessary to control for relevant factors to determine the marginal influence of the poison pill reaction.

Older managers may have more reputational capital at stake, and are thus less willing to expropriate wealth from the firm. However, as they approach retirement, older managers may regard their reputation to be decreasing in value over time. If so, at some point in time the value of their reputation will be of less value than their ability to maximize their own welfare at the cost of the shareholders. Empirically, this would lead to higher observed turnover among older top managers after an event where these managers do not work in the best interest of the shareholders. Higher turnover among older managers can also be explained by retirements. The primary difference would be the rate of involuntary turnover.

Outside directors may be the primary monitoring force on the board of directors. Although Warner, Watts and Wruck (1988) find an inverse relation between a firm's share performance and the probability of an officer change, Weisbach (1988), finds the relation holds only when outsiders dominate the board of directors. Similarly, Brickley, Coles, and Terry (1994) find that outside directors monitor top managers and reduce agency costs.

The industry of a firm may also affect the rate of turnover for top managers and inside and grey directors. If an industry is performing poorly and if labor markets base estimates of managerial quality on the firm's absolute performance, turnover may be higher in poorly performing industries. Morck, Shleifer, and Vishny (1989) find that takeovers are concentrated in underperforming industries,[16] while the rate of top management turnover is based on performance relative to the firms' industries. This may be because directors attempt to determine if anyone in the industry can do a better job at managing the company's assets while the external control market judges the firm on whether any other use maximizes

[16] Note, however, that the standardized prediction errors for industry clusters in Table 2 are not significant, providing weak evidence that some of the takeovers in these industries may be for benefits other than disciplining managers.

the value of the firm's assets.[17] Their results suggest internally initiated turnover should not be higher when an industry performs poorly compared to other industries in the market. A firm's industry may also determine the supply of close substitutes for existing top managers. A specialized industry may have few substitutes for a top manager. The lack of close substitutes should provide the top manager with some monopoly rents. Consistent with industry characteristics being factors in the rate of top management turnover, Parrino (1992) finds that turnover rates are a function of industry. Industries with many managers or with less asymmetric information on managerial quality tend to have higher turnover than industries where few managers have the skills of the current top management or in industries where less information is available about alternate top management candidates.

[17] It could also be because directors have a better idea of the firm's potential while individuals outside the firm can only see the firm's performance and therefore base their decisions on a different information set. Buying a firm in a poorly performing industry is less risky than buying a weak firm in a strong industry. The former may be doing poorly only due to industry-specific reasons and may be well-managed or have good potential for performing well. The latter firm is not likely to be well positioned in the market.

CHAPTER IV

SAMPLING PROCEDURE AND DESCRIPTIVE STATISTICS

Sample

The 247 publicly traded firms in the sample enacted poison pills over the period 1984 through 1986.[18] Brickley, Coles, and Terry (1994) provided their sample and the results of their market model event study using equally-weighted CRSP index with dividends.[19] I use the sign of the standardized prediction error associated with the poison pill announcement date to divide the firms into two subsamples.[20] I assume top managers and directors of firms that experienced negative standardized prediction errors have diverged from the best interests of shareholders. Top managers and directors of firms that experienced positive standardized prediction errors are assumed to have interests that converge with the interests of the shareholders. The firms with no reaction are grouped with the convergent firms, but grouping them with divergent firms does not change the results. The complete sample of

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[18] The vast majority of the sample firms adopted poison pills in 1986 and the results are generally invariant to dropping firms who adopted poison pills before 1986. Most of the proxies are issued in the first half of the year. In order to test if the market is learning about the effects of poison pills over time, I used a dummy variable to indicate firms with annual meetings before June 1, 1986. The coefficient was not significant.

[19] Their sample, in turn, was derived from the data set of John Byrd and Michael Ryngaert. The selection criteria for their data set included 1)the firm has return data over the relevant time period on the Center for Research in Security Prices (CRSP) Tapes; 2)the firm is contained on the COMPUSTAT tapes; 3)the firm has the relevant proxy statement in the "Q" data file; and 4)an announcement of the pill is reported in the financial press. These criteria may lead to a sample with primarily large firms, and 187 of 247 firms are in the Fortune 500, the 500 largest United States firms. There does not appear to be a greater bias in size toward either subsample as a chi-square test of differences in probabilities cannot reject equal likelihood of Fortune 500 firms for each subsample at ten percent.

[20] Confounding events may provide misleading information on the true reaction to a poison pill announcement. Confounding events were associated with sixty-nine firms during the two day event window. Of the sixty-nine firms, the announcement of forty dealt with dividends or earnings. The other twenty-nine had various events such as calling debt, restructuring, or lawsuits. Dropping these firms provided results consistent with the full sample results. It does appear, however, that the significant levels decreased when the sample size decreased.

247 firms listed in table 1 contains 126 divergent firms, 11 firms with no reaction that are added onto the convergent firm list and 110 convergent firms[21].

I gathered data from the proxy statements and 10-K forms of each firm for the year of the event date[22] and the three years after the event date on top managers, the board, the firm, and outside shareholders. I collected age, tenure, compensation, ownership of share in the firms, number of seats on other boards[23], current position, and the director's or manager's relations with the firm for each director and top manager. Age, tenure and compensation[24] data were found in the proxy statements or 10-K statements that the firms released immediately before the poison pill announcements. I collected share ownership, current position, relations with the firm and the number of seats on other boards[25] for each manager and director. The data collected for each firm include the ownership of large

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[21] The eleven firms with a zero standardized prediction error were classified in neither group for the non-parametric tests but were included in the parametric tests. Therefore, the non-parametric tests usually contain 236 observations. Parametric tests results are generally robust to the inclusion or exclusion of these eleven firms.

[22] I also collected proxy data from the year before the event date to provide baseline estimates for variables such as seat changes and turnover. If turnover occured the same year as the poison pill adoption I treated it differently depending on when it occured. If I can identify the turnover to have occurred before the poison pill date, I do not treat that event as manager or board turnover. If I was unable to identify when the turnover occurred or if it occurred after the poison pill date, the turnover was defined to be in year zero.

[23] I collected only seats on the boards of commerical companies which were not identified as having the individual as owner or founder of the firm. Groups of mutual funds were treated as a single seat, as were seats on both a company and it's subsidiary. Sitting on the board of a subsidiary of the sample firm was treated as no seats. Sitting on governmental bodies or advisory councils, the boards of charities and other non- or not for- profit corporations were not counted when they could be identified.

[24] CEO compensation is the sum of the cash salary and the bonus. Board compensation is generally paid out as a fixed retainer plus a per meeting fee, a fee per committee meeting attended, and retirement benefits.

[25] I also collected board interlocks. Interlocks are directors serving on more than one board in the sample. I found that directors of firms in the convergent sample were more likely to have interlocks with other convergent firms than with divergent firms. The results are significant at ten percent. The pattern of interlocks suggests there may be firms that have with a culture conducive to divergence and they recruit directors who fit into their culture. This argument is further buttressed by the evidence from the replacements of top managers. Although top managers in the divergent sample are classed as having involuntary turnover more often than convergent managers, convergent firms use outside replacements at a statistically significant higher rate. It may be the firms in the divergent sample have top managers with few good close substitutes in keeping with the arguments of Parrino (1994).

Table 1
The List of Sample Firms

The sample firms adopting a poison pill betweeen 1984 and 1986. The sample includes 110 convergent firms, 126 divergent firms and 11 firms with a zero standardized prediction error.

Panel A: Convergent Firms and Firms with a zero reaction on announcement of a poison pill

Adams Russell Co.
Alleghany Corp.
Ames Department Stores
Apache Corp.
Avery Corp.
Bank Bldg. and Eqpt. Corp.
Barry Wright Corp.
Black and Decker Corp.
Brunswick Corp.
CPC International Inc.
Carson Pirie Scott & Co.
Cincinnati Bell Inc.
Colgate-Palmolive Co.
Crystal Brands Inc.
Dennison MFG. Co.
Eagle-Picher Inds.
First Mississippi Corp.
Flow General
General Signal Corp.
Halliburton Co.
Honeywell Inc.
IU International
International Multifoods Co.
Jamesway Corp.
LaClede Gas Co.
M Amer. Pipeline Co.
McDonalds Corp.
NCR Corp.
Nicolet Instruments
Panhandle Eastern Corp.
Quanex Corp.
Rhone-Poulenc Rorer
Ryland Group Inc.
Scott Paper Co.
Staley Continental Inc.
SuperValue Inc.
TJX Companies Inc.
Transamerica Corp.
Union Carbide Corp.
Wainoco Oil Co.
Zenith Electronics Corp.

Alaska Airgroup Inc.
American Cyanamid Co.
AMFAC Inc.
Arvin Industries Inc.
Ball Corp.
Bank of New York Co. Inc.
Becton Dickinson & Co.
Borden Inc.
Burndy Corp.
CSX Corp.
Centex Corp.
Citadel Holdings
Corning Inc.
Data General Corp.
Donaldson Co. Inc.
Eastern Co.
Fleming Companies Inc.
GATX Corp.
Goodyear Tire and Rubber
Hexcel Corp.
Hydraulic Co.
Indiana Energy Inc.
International Shoe Co.
Kellwood Co.
Louisiana Land & Exp.
Martin Marietta
Melville Corp.
NL Industries
Nortek Inc.
Pillsbury Co.
Questar Corp.
Ryder Systems Inc.
Safety-Kleen Corp.
Southwest Airlines
Stone Container Corp.
Sysco Corp.
Thiokol Corp. Inc.
Transco Energy Co.
Valero Energy Corp.
Washington National Corp.

ALCOA
American President Cos.
Anthony Industries Inc.
ASARCO
Bally Manufacturing
Bard Inc.
Berkey Inc.
Bowater PLC
CBI Industries Inc.
Callahan Mining Corp.
Ceridian Corp.
Coleman Co. Inc.
Crane Co.
Delta Air Lines Corp.
Donnelley & Sons Co.
FMC Corp.
Foote Cone and Belding
GRC International Inc.
Grolier Inc.
Holiday Corp.
Hospital Corp of Am.
Interlake Corp.
IPCO
Kerr McGee Corp.
Lucky Stores Inc.
McDermott Intl. Inc.
Mobil Corp.
National Education Corp.
PHH Corp.
Quaker Oats Co.
Ralston Purina Co.
Rykoff-Sexton Inc.
Schering-Plough
Sprint Corp.
Sun Electric Corp.
Tambrands Inc.
Toro Co.
Tribune Co.
Varian Associates Inc.
Weyerhauser Co.

Table 1 Continued

Panel B: Divergent Firms

AM International Inc.
Alpha Industries Inc.
Anheuser-Busch Cos. Inc.
Ashland Oil Inc.
Belo Corp.
Burlington Northern Inc.
Caterpillar Inc.
Conagra Inc.
Dana Corp.
Dravo Corp.
Emery Air Freight Corp.
FPL Group Inc.
Ferro Corp.
Gearhart Industries Inc.
Gerber Products Co.
Great Western Financial
Hecla Minimg Co.
Huffy Corp.
Instrument Systems Corp.
Intex Oil Co.
Knight-Ridder Inc.
Kroger Co.
Lockheed Corp.
Mattel Inc.
McGraw-Hill Inc.
Mohasco Corp.
Murray Ohio MFG Corp.
National Convenience Stores
Outboard Marine Corp.
Phillips-Van Heusen
Raytheon Co.
Rubbermaid Inc.
Square D Co.
Tandy Corp.
Texas Eastern Corp.
Thompson Ramo Wool.
Tonka Corp.
UGI Corp.
U. S. Air Inc.
Unocal Corp.
Viacom International Inc.
Williams Cos. Inc.

AMR Corp
American Brands Inc.
ARMCO Inc.
Atlantic Richfield Corp.
Boise Cascade Corp.
Cabot Corp.
Century Telephone Ent.
Consolidated Freightways
Dayton Hudson Corp.
Dresser Industries Inc.
Emhart Corp.
Federal-Mogul Corp.
Firestone Tire and Rubber
General Baking Co.
Gillette Co.
Harris Corp.
Helmerich and Payne
Imcera Group Inc.
Interco Inc.
Johnson Controls Inc.
Koppers Co.
Kysor Industrial Corp.
Longs Drug Stores Inc.
May Department Stores
McKesson Corp.
Monsanto Co.
NALCO Chemical Co.
National Intergroup Inc.
PPG Industries Inc.
Polaroid Corp.
Republic Gypsum Co.
Santa Fe Pacific Corp.
Stanley Works
Tesoro Petroleum
Texas Industries Inc.
Time Warner Inc.
Travelers Corp.
Union Camp Corp.
U. S. Shoe Corp.
UNC Gp.
Walgreen Co.
Xtra Corp.

Airborne Freight Corp.
American Stores Co.
Armstrong World Inds. Inc.
Barnes Group Inc.
Brown Group.
Carpenter Technology
Champion International Corp.
Cummins Engine
Dexter Corp.
Eaton Corp.
Enserch Corp.
Federated Department Stores
Galaxy Carpet Mills
General Mills Inc.
Great Northern Nekoosa
Hartmarx Corp.
Household International
Insilco Corp.
International Paper Co.
Kansas City Southern Inds.
Kraft Inc.
Lincoln National Corp.
Material Sciences Corp.
Maytag Corp.
Medtronic Inc.
Morrison Knudson Corp.
Nashua Corp.
Norton Co.
Phillips Petroleum Co.
RTE Corp.
Rohr Inc.
Sonat Inc.
Talley Industries Inc.
Texaco Inc.
Textron Inc.
Timken Co.
Trinova Corp.
USG Corp.
United Technologies
Upjohn Co.
Watkins-Johnson
Zurn Industries Inc.

blockholders, total number of shares outstanding, whether a member of the founding family sits on the board or is a top manager, other defensive measures adopted[26], and the number of proxy contests in the four year period to revoke poison pills or subject them to a vote.

I divide the board into inside directors, outside directors, and grey directors. Inside directors are either employees of the firm, former employees, or family members of employees of the firm. Grey directors are those directors who have a working relations[27] or a potential for working relations with the firm. This includes not only directors with consulting contracts, but also employees of a firm currently hired by the company, and individuals whose employing firms may have an opportunity to gain work from the company. This latter catagory includes lawyers, bankers, accountants, financial and managerial advisors, and potential suppliers of inputs to the company. Outside directors are the remaining directors including academics, politicians, employees of unrelated businesses, professional directors and private investors. I also break out professional directors from outside directors in my regressions as Brickley, Coles, and Terry (1994) argue these directors are most responsible for monitoring managers. For each class of directors, in addition to the aggregating the above information, I collected the fraction of turnover and the fraction of other board seats lost during the sample period.[28]

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[26] The other defenses variable includes golden parachutes, fair price amendments, and supermajority rules. Each of the components of the defense variables was run separately as well. The results of the regressions were not significant.

[27] Companies report substantial working relations with directors in their annual proxy statements. Occasionally a firm will indicate that these relations exist but note they are sufficiently small they do not enumerate them.

[28] For firms that were targets of successful takeovers, director turnover variable represents only for the period before the takeover, and the fraction of turnover was adjusted for fewer numbers of yearly observations. Without such adjustment, all classes of directors have significantly higher turnover conditional on a successful takeover. Although most taken-over firms did not issue regular proxy statements

Blockholders are shareholders not employed by the firm who possess at least five percent of the voting shares of the firm. I divide blockholders into related and independent classes. Related blockholders have working relations with the firm (e.g., managers of the firm's ESOP). Independent blockholders do not have working relations with the firm and have not had one for at least the past three years (e.g., fund managers).

Also from the proxy statements, 10-Ks and the *Wall Street Journal Index*, I collected the control events for the firms over the sample period. The control events include attempted takeovers[29], proxy fights initiated against the firm, shareholder proposals[30] on firm governance, shareholder lawsuits on firm governance, and reorganization or restructuring of firms in financial difficulties.

For each top manager released from their firm, where available I collected the date, reason given for leaving, and the intended future position of the manager from the *Wall Street Journal*[31]. Employment information was gathered from *Standard and Poor's Register of Corporations, Directors and Executives* for three years after a top manager lost a position.[32] Also balance sheet data including market value of equity, debt to equity,

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and directors may have remained on the board over extended periods of time, the directors were checked in the *Standard and Poor's Register of Corporations, Directors and Executives.* The great majority of directors in taken-over firms did not remain on the board even one year after a successful takeover.

[29] Only eleven firms in the sample were in a takeover battle when they announced a poison pill. Twenty-eight other firms were subject to takeover speculation when the poison pill was adopted.

[30] I used only shareholder proposals that were governance related and not the social proposals that were common during the 1980's.

[31] I attempted to collect similar information on directors, but announcements were rare, and the infrequent cases where the reason was given, nearly all were called retirement. The future position of directors in the three years after turnover depended more on their primary job rather than their board loss, so the position was usually the same as their current position. A Chief Executive Officer who lost a board seat tended to stay Chief Executive Officer so there was no significant difference.

[32] The numbers often do not jibe with those given in the proxy statements. Therefore, I collected the number of seats held in the year before turnover to be used as a baseline. Although this controls for the unequal reporting across firms, this will tend to bias down seat changes as a seat may have been lost between the proxy statement and the collection of the data in the *Directory*.

earnings per share in the year of the pill enactment, and book value of debt was collected from COMPUSTAT.

Descriptive Statistics

The descriptive statistics of firms are divided into two subsamples depending on the reaction to the announcement of a poison pill.[33] Convergent firms are assumed to have convergent top managers and directors. Divergent firms are assumed to have divergent top managers and directors.

Table 2 reports the industries represented in my sample. The majority of the sample falls into the 30 industries with three or more firms each. There are 21 industries with two firms per industry in the sample and 68 industries represented by only one firm. No industry has a significant standardized prediction error. The largest average standardized prediction error is for the leather and leather products industry with just a 0.848 average standardized prediction error. Using a Wilcoxon test of differences across industries, I cannot reject the null hypothesis of no differences in industry concentration between the convergent and divergent subsamples. I also tested for any significant difference between the concentration using the total percentages of convergent and divergent firms and again found no significance.

Table 3 reports the characteristics of the sample firms including market value of equity, debt to equity ratio, firm book value, earnings per share in the year before the poison

[33] It has been suggested that I collect a control sample of non-poison pill firms. The study, however, is not about poison pills, but rather about measuring manager behavior. Poison pills merely provide a convenient vehicle for classifying manager behavior. The control, therefore, is the prediction error and comparing positive and negative prediction errors.

Table 2
Sample Distributed by Industry

Industry concentration in firms adopting poison pills. The sample is 247 firms that adopted poison pills during 1985 and 1986 [a].

		Number of Firms			2-Day SPE
2-Digit SIC	Industry Name	Total	Convergent	Divergent	Mean
1000	Metal Mining	3	1	2	-0.380
1300	Oil and Gas Extraction	10	6	3	0.728
2000	Food Products	12	7	5	0.260
2200	Textile Mill Products	4	1	3	-0.276
2600	Paper and Allied Products	11	5	5	-0.176
2700	Printing and Publishing	7	3	3	0.418
2800	Chemicals	16	5	8	-0.111
2900	Petroleum Refining	8	2	6	-0.452
3000	Rubber and Misc. Plastics	5	2	3	-0.195
3100	Leather and Leather Products	4	2	2	0.848
3200	Stone, Clay and Glass Products	7	1	4	-0.452
3300	Primary Metal Industries	7	4	3	-0.155
3400	Fabricated Metal	9	5	4	-0.001
3500	Commercial Machinery	18	9	9	0.505
3600	Electric Machinery	14	6	8	-0.067
3700	Transportation Equiptment	13	4	9	0.117
3800	Measuring Instruments	5	2	3	-0.193
3900	Misc. Manufacturing	3	1	2	-0.496
4500	Air Transport	6	3	3	-0.014
4800	Communications	4	2	2	0.231
4900	Electric, Gas and Sanitation	8	5	3	0.079
5100	Nondurable Goods-Wholesale	5	4	1	0.377
5300	General Merchandise Stores	8	5	2	0.056
5400	Food Stores	5	2	3	-0.140
6700	Investment Offices	12	8	4	-0.045
7500	Auto Repair and Service	3	2	1	-0.197

[a]SIC codes and Industry names were pulled from COMPUSTAT. Only industries with three or more firms are listed. 41 Firms do not fall in the 26 two-digit industries.Convergent is the subsample which exhibited a positive share price reaction upon the announcement of poison pill adoption. Divergent is the subsample which exhibited a negative share price reaction upon announcement of poison pill adoption. Zero reaction firms are grouped with the convergent firms. Mean two-day SPE is the average standardized prediction error for the firms in that industry around announcement of a poison pill.

[b]The total percentage of firms classified as convergent is 45.77 while the total percentage of firms in the seventeen most concentrated industries is 48.08 percent.

TABLE 3
Descriptive Characteristics of Poison Pill Firms

Descriptive characteristics of firms adopting poison pills. Sample consists of 236 firms which adopted poison pills during the period 1984 to 1986. The convergent subsample contains 110 firms and the divergent subsample contains 126 firms. Table reports the firm variables based on reported information most closely predating the adoption of a poison pill by that firm[a].

Firm Attributes	Firm Size	Equity Value	Debt/Equity	EPS	% Owned by Blockholders[b] Related	Independent
Convergent						
Mean	2601.06	1379.90	0.45	1.62	5.05	6.74
Median	1300.36	953.33	0.37	1.91	0.00	5.54
Divergent						
Mean	3513.77	1754.76	0.39	1.66	5.47	7.30
Median	1462.76	975.04	0.26	1.91	0.00	5.35
Difference in Means[c]	1.02	2.17[g]	1.35	1.86[e]	1.66[e]	0.64
Difference in Medians[d]	0.27	5.32[g]	9.98[g]	0.01	9.99[g]	0.01

[a]Income and balance sheet data are obtained from the COMPUSTAT Annual Industrial tape. Proxy and 10K data are obtained from Disclosure and Q-Data microfiches. The convergent subsample exhibited a positive equity price reaction upon the announcement of poison pill adoption. The divergent subsample exhibited a negative equity price reaction upon announcement of poison pill adoption. Firm Size is the book value of assets in millions of dollars. EPS is earnings per share of the firm during the year of poison pill adoption.

[b]Percentage owned by blockholders shows the percentage of the firm that is owned by non-director equityholders with more than five percent of the common equity of the firm. Related large equityholders are firms or individuals controlled by or possessing a working relation with the directors while independent equityholders are all other shareholding organizations.

[c]Difference of means uses a Mann-Whitney test of difference in means. Reported number is a z-statistic.

[d]Difference of Medians uses a test of difference in medians. Reported number is a chi-squared statistic with 1 degree of freedom.

[e]Significant at ten percent.

[f]Significant at five percent.

[g]Significant at one percent.

pill was enacted, and the holdings of large shareholders. Most firms in both samples fall into the three largest size deciles.[34] The firms with value-reducing poison pills tend to be much larger.

Despite the size difference, debt to equity ratios tend to be much higher for firms in the value-increasing subsample. This tendency may be indicative of different managerial philosophies across groups toward shareholder sovereignty.[35]

Outside blockholders, individuals not employed by the firm who own over five percent of a firm's shares, possess no greater percentage of the shares of firms that adopt value-reducing poison pills than for other firms.[36] The shareholdings of related blockholders, blockholders with close ties to the firm, are significantly greater for firms with value-reducing poison pills. Large blocks controlled by managers or the board can be used to entrench managers by insulating them from other blockholders.

Tables 4 and 5 report the characteristics of the top managers and directors of the firms in the sample including age, tenure, compensation, and equity ownership.

The mean age is higher for both top managers and directors in the divergent subsample. This suggests that age may make a difference in measured turnover rates and should be controlled.

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[34] 183 firms, almost three-fourths the sample, are in the Fortune 500 for 1986.

[35] Jensen(1986) argued that limiting free cash flows in the firm will tend to reduce agency costs. The results of the debt to equity ratio supports his argument.

[36] Chart 1 suggests that the difference in blockholdings across the two subsamples peaks during the year before poison pill adoption, and decreases after that point. Outside blockholdings in firms that adopt value-reducing poison pills remain relatively stable suggesting large blockholders either knew managerial quality or did not change investment decisions based on managerial quality.

TABLE 4
Descriptive Characteristics of Managers

Selected characteristics of managers of 236 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. The convergent subsample contains 110 firms and the divergent subsample contains 126 firms. Table reports the firm variables based on reported information most closely predating the adoption of a poison pill by that firm[a]

	Age[b]	Tenure[c]	Ownership(%)[e]	Compensation[d]
Convergent				
Mean	55.21	12.91	1.23	592.99
Median	55.50	10.50	0.30	546.27
Divergent				
Mean	57.10	13.65	1.00	677.58
Median	57.50	12.00	0.21	574.35
[f]Difference: Means	2.18[j]	1.31	2.38[j]	1.27
[g]Difference: Medians	2.37	1.48	5.52[i]	0.45

[a]Proxy and 10K data are obtained from *Disclosure* and *Q-Data*. Convergent is the subsample which exhibited a positive equity price reaction upon the announcement of poison pill adoption. Divergent is the subsample which exhibited a negative equity price reaction upon announcement of poison pill adoption.

[b]Age is the age of the CEO as reported in the proxy statements immediately before a poison pill is enacted.

[c]Tenure is the average number of years served by the CEO in the current position.

[d]Compensation is the total salary and bonus of the CEO during the year of poison pill enactment in thousands of dollars.

[e]Percentage ownership is the percentage of the company's common equity held by the CEO of the company.

[f]Difference of means uses a Mann-Whitney test of difference in means. Reported number is a z-statistic.

[g]Difference of Medians uses a test of difference in medians. Reported number is a chi-squared statistic with 1 degree of freedom

[h]Significant at ten percent

[i]Significant at five percent

[j]Significant at five percent

TABLE 5
Descriptive Characteristics of Directors

Selected characteristics of directors of 236 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. The convergent subsample contains 110 firms and the divergent subsample contains 126 firms. Table reports the firm variables based on reported information most closely predating the adoption of a poison pill by that firm[a]

	Age[b]	Tenure[c]	Ownership(%)[e]	Compensation[d]
Convergent				
Mean	58.42	9.07	4.12	26.81
Median	58.68	8.81	1.94	25.60
Divergent				
Mean	59.65	9.68	4.46	27.64
Median	59.76	9.20	1.18	27.35
[f]Difference: Means	2.88[j]	1.16	0.74	0.92
[g]Difference: Medians	2.86[h]	0.27	3.33[h]	3.34[h]

[a]Proxy and 10K data are obtained from *Disclosure* and *Q-Data*. The directors are classified as either insiders, outsiders, or grey directors. The classification system parallels that used by Brickley, Coles, and Terry (1994). Convergent is the subsample which exhibited a positive equity price reaction upon the announcement of poison pill adoption. Divergent is the subsample which exhibited a negative equity price reaction upon announcement of poison pill adoption.

[b]Age is the average age of directors as reported in the proxy statements. The mean value is estimated using equal weights across firms.

[c]Tenure is the average number of years served by the directors on the board of directors. The mean value is estimated using equal weights across firms.

[d]Compensation is the total salary, meeting fees, and accrued benefits paid to the average outside or grey director during the year. These benefits may include retirement payments, committee chair pay, deferral benefits, travel benefits,and participation in the firm's employee benefit programs. In thousands of dollars.

[e]Percentage ownership is the percentage of the company's common equity held by the directors of the company.

[f]Difference of means uses a Mann-Whitney test of difference in means. Reported number is a z-statistic.

[g]Difference of Medians uses a test of difference in medians. Reported number is a chi-squared statistic with 1 degree of freedom

[h]Significant at ten percent

[i]Significant at five percent

[j]Significant at five percent

There is no significant difference in tenure or top manager compensation across the two subsamples. Top manager ownership of the firm tends to be higher for firms that adopted value-increasing poison pills. This evidence is consistent with the literature suggesting that low managerial ownership is associated with greater entrenchment.

Director shareholdings are consistently higher for firms that adopt value-increasing poison pills although the means are not significantly different. This evidence is consistent with the argument if the board has it's wealth on the line, on the margin the directors will be more vigorous in pursuing value and limiting the divergence of the top manager in the firm.

The tables can be used to construct an average profile of the firms and top managers in each subsample. Top managers whose interests diverge from the interests of shareholders typically manage a large firm producing machinery. The firm has a debt to equity ratio of approximately 0.40 and, on average, two large blockholders together own about twelve percent of the firm. The top managers have worked in their current position almost fourteen years and typically do not own much of the firm's stock Top managers whose interests converge with those of shareholders typically manage a firm producing consumer goods. A typical firm run by convergent managers and directors has a higher debt to equity ratio and slightly less blockholdings than the other firm Unlike their divergent counterparts, however, the managers and directors classified as convergent own a greater percentage of their company. The difference in ownership may be partially due to firm size differences as managers of larger firms often own less of their company[37] than do manager of smaller firms.

[37] Less of their company meaning a smaller fraction of the total equity of the firm. Managers of large firms may hold more equity in their firm than do managers of small firms, but the size difference means that the percentage holding is often less for the manager of the bigger firm.

CHAPTER V

METHODOLOGY

Univariate Non-Parametric Tests

I use non-parametric tests of means and medians to determine the degree to which the two subsamples differ. Univariate non-parametric tests of means and medians are robust to distributional assumptions and are affected less by possible non-linearities. I conduct the non-parametric tests for both managers and directors on turnover rates and changes in the number of seats on other boards. The Mann-Whitney test, under the added restriction that the distributions of the two subsamples are equal up to an additive linear transformation, is the test of difference in means. In the test the observations from both subsamples are ranked in ascending order. The ranks of one subsample are then summed to provide the test statistic[38]. The null is rejected if the statistic is either too high or too low. The median test entails dividing each subsample into groups above and below the grand median of the whole sample. The two subsamples are significantly different if one subsample has a large enough proportion of observations above or below the median value. The median tests use the chi-square distribution with one degree of freedom as an approximation. I also used a difference in probabilites test in some tables and in ancilliary tests reported in the footnotes. This test determines if the fraction of the convergent subsample exhibiting some characteristic is the

[38] With a large number of ties, the method needs to be adjusted. Tied observations are each given a rank equal to the average of the ranks that would have been assigned to the observations had they been ranked normally.

same as the fraction of the divergent subsample exhibiting the same characteristic. Again, the critical statistic is approximately chi-square with one degree of freedom.

Cross-Sectional Tests

Multi-Stage Regressions

Cross-sectional tests of turnover and changes in seats on other boards may determine the effectiveness of internal and external labor markets for managers of the firm. The use of cross-sectional tests allows control of variables affecting turnover not related to manager behavior. In addition to ordinary least squares regressions, I use both two-stage and three-stage least squares estimators. Three-stage least squares method combines two-stage least squares with seemingly unrelated regression analysis.

A key assumption in ordinary least squares regression is that the independent variables are statistically independent of the model's unobserved error. If regressors are dependent variables in a larger simultaneous equation, the statistical independence assumption may be violated producing inconsistent parameter estimates. In my study, I use the reaction to poison pill announcements as a proxy for top manager and director behavior. I attempt to determine if the behavior leads to higher rates of turnover for divergent top managers and directors. However, if top managers and directors face a large probability of turnover, they will moderate any divergent behavior. Therefore, top manager turnover influences the poison pill reaction which in turn affects the rate of turnover.

The dependent regressor problem, often called simultaneous equation bias, can be corrected by using expected values of the endogenous regressors. Estimating the predicted values requires a preliminary, first-stage, instrumental regression. The instrumental, or two-

stage least squares, regression entails regressing the dependent regressors on a set of independent, or instrumental, variables. Any independent variable useful for predicting the dependent regressors may be used as an instrumental variable. Multi-stage regressions, however, introduce their own problems. Although estimates are generally not sensitive to the instruments, if the first stage regression has low explanatory power, the predicted value of the dependent variables can be very sensitive to the instruments used. This problem is exacerbated by the lack of explicit expressions for the relations among a firm's characteristics. Without equations providing functional forms for the different characteristics, no set of instruments can be determined to be best *ex-ante*.

Previous finance literature suggests a variety of possible instruments for limiting managerial behavior that is not in the interest of shareholders. I divide the control mechanisms into three groups: manager-specific, board-specific, and firm-specific attributes. Manager-specific attributes are the characteristics of top managers that affect the level of agency costs in the firm. The attributes include the share ownership by the top managers, the manager's tenure in the current position, the age of the top managers, and the marginal increase in wealth from salary and other benefits. The board-specific attributes include both individual characteristics and board structure. The individual characteristics are the average across all directors of share ownership, tenure on the board, age, and the estimated mean director salary. The board structure variables are board size, whether a member of the founding family serves on the board, and the percentages of inside, outside, and gray directors. The final four control variables are firm-specific attributes. The attributes include firm size, the industry of the firm, the leverage of the firm, and the percentage of outside ownership in the firm. All four variables may act as or facilitate monitoring agents. The

equation 1 is estimated to provided a predicted value of the standardized prediction error from the instruments:

$$r_1 = \alpha + \sum_{i=1}^{3} \beta_{1i}\delta_{1i} + \sum_{j=1}^{8} \beta_{2j}\Phi_{1j} + \sum_{k=1}^{4} \beta_{3k}\omega_{1k} + \varepsilon_1$$

(1)

$$r_m = \alpha + \sum_{i=1}^{3} \beta_{1i}\delta_{mi} + \sum_{j=1}^{8} \beta_{2j}\Phi_{mj} + \sum_{k=1}^{4} \beta_{3k}\omega_{mk} + \varepsilon_m$$

where,

$i = 1,2,3$ - counter for top manager-specific attributes

$j = 1,...,8$ - counter for board-specific attributes

$k = 1,2,3,4$ - counter for firm-specific attributes

$m = 1,...,247$ - number of firms in the sample

r_m = Standardized prediction error around announcement of a poison pill by firm

δ_{mi} = Manager-specific control attribute i for firm m

Φ_{mj} = Board-specific control attribute j for firm m

ω_{mk} = Firm-specific control attribute k for firm m

ε_m = The random error term for observation m

The first stage provides a predicted value, fitted from the instruments, of the standardized prediction error or other dependent variable. The second stage entails regressing the turnover or seat change variable on the predicted values of the standardized prediction error from the above regressions along with control variables such as takeovers, proxy fights, shareholder proposals, restructuring, age, and shareholder lawsuits. Two-stage least squares regressions may have a nonlinear specification, but it is not clear what degree polynomial to use without prior information on the functional forms. Therefore, it will be appropriate to use only a linear specification for the regression analysis. As it uses the predicted values from the first stage, the second stage is represented by the following equation.

$$d_1 = \alpha_1 + B_1 r_{11} + \sum_{k=2}^{7} B_K \Theta_{K1} + \varepsilon_1$$

(2) :

$$d_m = \alpha_m + B_1 r_{1m} + \sum_{k=2}^{7} B_K \Theta_{KM} + \varepsilon_m$$

where,

m = 1,...,247 - number of firms in the sample

r_m = Standardized prediction error around announcement of a poison pill by firm

d_m = Dependent variable (turnover or seat changes) for firm m

ε_m = The random error term for observation m

Θ_{Km} = Control Variable for k= 2,3,4,5,6,7.

Therefore, after determining the relevant instrumental variables, the second stage regression uses the control variables, including the dependent predicted value of the standardized prediction error from the first stage regression, to predict the remaining dependent variable in the second stage regression.

If a system of equations has correlated random errors, seemingly unrelated regression analysis (joint generalized least squares) can increase the large-sample efficiency of the regression analysis. The seemingly unrelated regression method requires a preliminary estimate of the variance-covariance matrix. An estimated variance-covariance matrix is determined from the residuals of a preliminary ordinary least squares regression. The estimated matrix is then used to estimate the regression parameters in the second step of the seemingly unrelated regression.

Three-stage least squares regression uses residuals from the preliminary regression of the two-stage least squares method and from the regression of another dependent variable on independent variables to determine the variance-covariance matrix. The three-stage estimates controls for both the simultaneous equation bias from the two-stage least squares and the problem of correlated random errors in the variance-covariance matrix from the

random errors in the variance-covariance matrix.

$$d_{11} = \alpha_{11} + \sum_{i=1}^{3} \beta_i \delta_{1i} + \beta_4 \hat{r}_1 + \varepsilon_{11}$$

(3)

$$d_{1m} = \alpha_{1m} + \sum_{i=1}^{n} \beta_i \delta_{mi} + \beta_4 \hat{r}_m + \varepsilon_{1m}$$

$$d_{21} = \alpha_{21} + \sum_{K=1}^{p} \beta_K q_{1Ki} + \varepsilon_{21}$$

$$d_{2m} = \alpha_{2m} + \sum_{K=1}^{p} \beta_K q_{mK} + \varepsilon_{2m}$$

where,

d_{im} = Turnover, seat changes or SPE for top managers or directors in firm m

$m = 1,...,247$ - number of firms in the sample

$\hat{r}_m$ = Predicted standardized prediction error around announcement of a poison pill by f

δ_{mi} = Instrument i for firm m

ε_m = The random error term for observation m

q_{mp} = The pth variables for estimating SPE for firm m

$m = 1,...,247$ - number of firms in the sample

$\hat{r}_m$ = Predicted standardized prediction error around announcement of a poison pill by f

δ_{mi} = Instrument i for firm m

ε_m = The random error term for observation m

Estimation of the variance-covariance matrix increases the sampling variability of the estimator for small sample sizes. The greater variability reduces and may eliminate the efficiency gain over ordinary least squares regressions. If the results of the three-stage regressions are consistent with the ordinary least squares regressions, the simultaneous equation bias and correlated random errors are not a major factor in the regressions. The third stage of regressions determines which monitoring mechanisms can explain managerial turnover or changes in board seats. The results of the regression provide evidence on the factors associated with either a greater rate of top management and director turnover in the firm or a greater rate of seat losses from the seats on the board of directors of other firms.

Binary Regressions

Top manager turnover is somewhat different than the other variables being used. It is a dichotomous variable so use of a multi-stage regression or ordinary least squares can lead to significant heteroskedasticity. To control for this problem, a probit regression is used in addition to the previous methods. The model computes the maximum likelihood estimates of the parameters in the following equation for a binary variable Y:

$p = Pr(Y=0) = C + (1-C)F(\mathbf{x}'\mathbf{B})$

F = The cumulative distribution function.

p = The probability of a response.

(4) C = The natural rate of response.

$\mathbf{x}$ = Vector of independent variables.

$\mathbf{B}$ = Vector of parameter estimates.

The probit regression allows regressions to be run on dichotomous dependent variables to check the results from the other regressions are robust. Logistic regressions were also run, but there were no significant differences between outcomes of the different regressions and only probit results were reported. The chi-square tests for the individual values are Wald tests based on the observed information matrix and the parameter estimates.

Survival Analysis and Censored Models

Survival Data Analysis

Although useful for indicating turnover for the whole sample period, the usual class of regressions are unable to identify when the turnover occurs. A heavy concentration of

turnover in the first few years has a very different meaning than a concentration near the end of the sample period. The usual class of regressions cannot distinguish between these two. Rather survival data analysis can be used to determine time to loss of a position of top managers and directors. When a failure time variable such as turnover is collected over a period of time, the assumed model is usually:

(5)
$$\mathbf{y} = \sigma\varepsilon + \mathbf{XB}$$
$\mathbf{y}$ = Log of turnover time
$\mathbf{X}$ = Matrix of Regressors
$\mathbf{B}$ = Regression Parameters
ε = Vector of errors from a known distribution
σ = A scale parameter

The parameters are estimated by maximum likelihood.[39] This model is equivalent to an accelerated failure time model for the log of turnover.

The accelerated failure time model assumes that the effect of independent variables on an event-time distribution is multiplicative in the event time. Assuming a scale function of exp(**x**'**B**) where **x** is a current vector of known variables and **B** is a vector of unknown parameters. Then, if T0 is an event time from the baseline distribution, then the model specifies T= exp(**x**'**B**)T0. To gain a simple linear equation from the exponential specification, it is possible to set y=log(T) and y0=log(T0)=ε. This transformation allows the equation to be written as:

(6) $\mathbf{y} = \mathbf{x}'\mathbf{B} + \varepsilon$

[39] Using a Newton-Raphson method.

Adding an intercept and scale parameter to the original event time model,

(7) $\log(T) = s + \sigma \log(T0)$

Performing the log-log transformation and renaming varables as in equation 6 provides equation 5.

I use the extreme value (Weibull) distribution although both the normal and exponential distributions were run and showed results that were generally consistent with the Weibull distribution. Because turnover data was collected yearly and treated as occurring at the annual meeting, the survival time to turnover variables were everywhere greater than or equal to one as the data comes from yearly sampling of turnover. This catagorization avoided distortions from taking the log of small values. This is important as the parameter estimates for the normal distribution are sensitive to large negative values in the transformed variables. Likewise, parameter estimates of the extreme vlaue distributions are very sensistive to large positive values. The data was checked to ensure no such values were used.

The model also allows for right censoring. Top managers who do not lose their position during the sample period are treated as right censored observations. The various board turnover variables are treated somewhat different. I determine the survival time for each class of director by summing up the survival time for each director on the board. In order to make aggregation easier, divide the summed survival time by the number of that class of director on the board. This provides an average survival time for the class of

director for that firm and can be considered a series of independent one year trials for each director of each class in the firm. In this case, censoring occurs for a group of directors if and only if none of the directors in the group lose their position during the sample period. The aggregating of information provides equal weighting for each firm so that no class of directors can be dominated by a few firms where turnover from that class may be particularly high or low.

Survival Strata

It is also possible to use the survival times to turnover as dependent variables to calculate survival distributions and test for differences across stratified the sample stratified by some variable. I use the standard prediction error to stratify the sample into two groups.[40] I then use the product-limit method to compute the survival distribution. In the product-limit method, the survival distribution function at time J is just the fraction surviving at the end of time period J multiplied by the fraction surviving at the end of each of the time periods J-1, J-2,...1. It is also possible to calculate a mean survival time but with many censored data points the mean would be very biased.

There are three tests for equality of survival curves across strata; the Log-rank test, the Wilcoxon test, and the Likelihood-ratio test. The rank statistics for the first two tests is shown in equation 8 and continued in equation 9. The third statistic is found following them in equation 10.

[40] Various other stratifications such as quintiles, deciles, and dividing the prediction error at one standard deviation. Results of these test were similar to the two strata results.

$$v_j = \sum_{m=1}^{K} w_m (d_{mj} - n_{mj} d_m / n_m)$$

d_{mj} = *Number of turnovers occuring at time m in strata j*

(8) n_{mj} = *Number of survivors at time m - 1 in strata j*

$$d_i = \sum d_{mi}$$

$$n_i = \sum n_{mi}$$

The test uses the vector **v** across all j in the homogeneity test statistic $\mathbf{vV^{-1}v}$ where $\mathbf{V^{-1}}$ is the inverse of the covariance matrix $V=(V_{jp})$:

$$_{jp} = \sum_{m=1}^{k} w_m^2 (n_m n_{mp} \delta_{jp} - n_{mj} n_{mp}) d_m s_m / (n_m^2 (n_m - 1))$$

(9) $s_m = n_m - d_m$

j = *stratum*

m = *time*

The statistic has a chi-square distribution with the degrees of freedom equal to the rank of the covariance matrix.

The first two tests are very similar in construction and results. The likelihood ratio test is the third of the tests done on the stratified data to check for homogeneity. The likelihood ratio test statistic for homogeneity assumes that the data in the each of the various strata are exponentially distributed. The likelihood ratio test then checks for equality of the scale parameters across the various defined strata. For the likelihood ratio test, the test statistic Z is distributed approximately chi-square with degrees of freedom equal to one less than the number of strata. The formula for the test statistic, different than that of the two previous test statistics is expressed as equation 10. Any number of stratum

can be developed, but for this study it makes the most sense to use two stratum divided by a zero poison pill announcement reaction.

$$Z = 2(N\log(T/N) - \sum_{j=1}^{c} N_j \log(T_j / N_j))$$

N_j = Total number of events in the jth stratum

(10) T_j = Total time on test for the jth stratum

$$N = \sum_{j=1}^{c} N_j$$

$$T = \sum_{j=1}^{c} T_j$$

CHAPTER VI

RESULTS

Internal Labor Market

Univariate Tests of Director and Top Management Turnover

Table 6 provides comparative turnover rates for different management and board positions. The number indicates the fraction of individuals losing the noted position from year zero to year +3. In the four years following poison pill adoption, top managers in firms adopting value-reducing poison pills lose their current position at a 50% greater rate than top managers adopting value-increasing poison pills. Both the mean and the medians differ significantly across samples. Therefore, top manager turnover is significantly greater for firms that adopted value-reducing poison pills compared to the turnover in firms that adopted value-increasing poison pills. The results are consistent with the internal labor market hypothesis where the market penalizes top managers attempting to entrench with poison pill amendments.

Tests of differences in director turnover find less evidence for systematic differences in the director turnover. The tests provide weak evidence of a difference of median turnover for the whole board. Dividing the board into the different groups of directors provides strong evidence for differences in both means and medians for outside and professional directors. The inside directors and grey directors do not exhibit a difference in means or medians. The results are consistent with the outside and professional directors serving on the board to provide monitoring whereas grey and inside directors provide expertise rather

Table 6
Turnover of Top Managers and Directors

Turnover of top managers for 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. The convergent subsample contains 110 firms and the divergent subsample contains 126 firms. Year 0 represents the year of the firm's poison pill adoption. Management turnover is assumed to take place on the date of the first annual meeting after the turnover occurs.[a]

Year 0 to +3	Top Managers and Directors Rate of Turnover	
Turnover[a]	Convergent	Divergent
Fraction Losing CEO Position [c,f]	0.33	0.48
Fraction Losing a Director Position [b]	0.28	0.31
Fraction Losing Inside Position	0.35	0.40
Fraction Losing Grey Position	0.24	0.23
Fraction Losing Outside Position [c,f]	0.25	0.31
Fraction Losing Prof. Director Positon [d,f]	0.19	0.50

[a]Convergent is the subsample which exhibited a positive stock price reaction upon the announcement of poison pill adoption. Divergent is the subsample which exhibited a negative stock price reaction upon announcement of poison pill adoption. Reported numbers are average turnover across firms in the sample.
[b]Medians are significantly different at ten percent by the median test
[c]Medians are significantly different at five percent by the median test
[d]Medians are significantly different at one percent by the median test
[e]Means are significantly different at ten percent by the Mann-Whitney test
[f]Means are significantly different at one percent by the Mann-Whitney test

than monitoring. In such a case, it is costly to eliminate inside and grey directors. Conversely, outside directors serve the primary purpose on the board of monitoring. If they monitor poorly, the cost of replacing them is very low. One alternative explanation is that it may be that top managers eliminate outside directors who do not fully support the top managers' initiatives. However, when the board results are combined with the results of top manager turnover, the evidence suggests outside directors that are ineffective monitors are replaced by more effective monitors. Specifically, outside directors, and particularly professional directors, lose a board position more often in firms with value-reducing poison pills than in firms with value-increasing poison pills. The difference among professional directors is particularly striking. If as suggested in Brickley, Coles, and Terry (1994), professional directors act as monitors, the disparity in turnover rates across subsamples suggests that professional directors who the market believes are not effective monitors lose their position much more often than those who are strong monitors. Also striking is that the rate of professional director turnover in the covergent group is much lower than the rate of outside turnover in that same group. Professional directors, almost always retired top managers of other firms, should be expected to lose their seats more often than most outside directors if for no other reason than the average professional director is older and is more likely to have already retired from their primary position. In this case the rate of turnover is very dependent on the subsample that the professional director falls into. The rate of turnover is very high for those professional directors working in firms with divergent managers, while it is much lower for professional directors in firms with convergent managers.

Regression Estimates of Top Manager Turnover

In table 7, the reaction to the poison pill announcement is significant at five percent in explaining top management turnover. This result suggests when the poison pill reaction is very negative the turnover rate is higher over the next four years, even after controlling for various external control events. Consistent with the internal labor market effectiveness hypothesis, it appears that the board removes divergent top managers more frequently than convergent top managers.[41]

In regression 1, turnover is also significantly higher for older top managers, and when a firm restructures or is a target of a takeover attempt. The results suggest a natural attrition due to age, and higher turnover in firms that were bankrupt or fending off a takeover suitor. Turnover is actually lower when a shareholder submits a shareholder proposal. It may be that a proposal is a last attempt to influence an entrenched manager, or it may be that the proposal is aimed at improving the directors and changing managerial behavior. If the proposal is designed to pressure the board, we should expect to see higher board turnover. If it a proposal is sent only to entrenched boards, then board turnover may also be significantly negatively related to the use of shareholder proposals. The evidence in later tables suggests proposals are an attempt to influence board and less so managers directly. The result, therefore suggests the proposals are associated with active monitoring of the firm, rather than a futile attempt to get at entrenched managers. Regression 2 drops all variables but age and the standardized prediction error as the independent variables.

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[41] Test of multicollinearity and heteroskedasticity were performed on the regressions. With the exception of top management turnover neither was consistently detected. The binary response of top management turnover made the residuals less well behaved. To account for that difficulty, a probit was run. As reported in the text, the results of the probit regressions were consistent with those of the ordinary least square regressions.

Table 7
OLS Regression of Top Manager Turnover

Ordinary least squares regression of factors explaining top manager turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Reported figures are based on information contained in firms' annual proxy statements and 10K reports.[a]

Equations	1	2	3	4	5
Intercept	-4.37[e]	-4.63[e]	0.33[e]	-4.35[e]	-4.39[e]
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Standardized	-0.05[d]	-0.05[d]	-0.05[d]	-0.05[d]	-0.05[d]
Prediction Error	(0.04)	(0.03)	(0.02)	(0.03)	(0.03)
CEO Age	1.18[e]	1.25[e]		1.17[e]	1.18[e]
	(0.01)	(0.01)		(0.01)	(0.01)
Shareholder	-0.03		0.01		
Lawsuits	(0.72)		(0.99)		
Shareholder	-0.13[d]		-0.11[c]	-0.14[d]	-0.12[d]
Proposal	(0.03)		(0.08)	(0.02)	(0.04)
Takeover	0.37[e]		0.39[e]	0.40[e]	0.37[e]
Attempt	(0.01)		(0.01)	(0.01)	(0.01)
Proxy	0.13		0.15		
Fight	(0.33)		(0.27)		
Restructuring	0.21[d]		0.19[c]		0.22[d]
	(0.05)		(0.08)		(0.03)
R-squared	0.25	0.11	0.18	0.23	0.25
F-statistic	11.28[e]	14.93[e]	8.56[e]	18.14[e]	15.65[e]

[a]P-values are in parentheses.
[b]Top management turnover is the turnover of top managers in the three years following the poison pill adoption. Top management turnover is assumed to take place on the date of the annual meeting following the actual turnover.
[c]Significant at ten percent.
[d]Significant at five percent.
[e]Significant at one percent.

It shows the estimates on these variables are robust to the presence of other control variables. This suggests board monitoring and age are effective in firms whether or not outside control events occur. Regression 3 drops age and again finds the results robust to the specification. Although age is an important factor in turnover, it is not the primary driving factor, nor is it disproportionatly associated with some alternate measure of control. Rather it appears to mainly influence the intercept suggesting the age effects are fairly constant across firms. Regression 4 drops proxy fights, restructuring, and lawsuits. These control measures are most likely to be confounding with the strongly signficant takeover attempts as these are used either as a substitute for or as a complement of a takeover battle. The results of the remaining estimators are again robust to the alternate specification. Regression 5 results, adding restructuring as a way to get at bankruptcy, are consistent with earlier parameter estimates. The regressions are all statistically significant at one percent and no explanatory power is lost by leaving out proxy fights and shareholder lawsuits.

The probit results in Table 8 are consistent with the ordinary least squares results. The intercept is negative and significant in every regression. Likewise in every regression the standardized prediction error is negative and significant suggesting turnover is more likely for divergent managers and again supporting the internal labor market effectiveness hypothesis. Regression 2 shows the parameter estimates of the prediction error, age and the intercept are robust to whether other control variables are included. The top manager age is significantly positive in each equation, but it is clear from regression 3 the age is very strongly negatively related to the intercept. Regression 4 suggests dropping the lawsuit, restructuring and proxy fight variables increases the significance of the prediction error.

Table 8
Probit Regression of Top Manager Turnover

Probit regression of factors explaining top manager turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Reported figures are based on information contained in firms' annual proxy statements and 10K reports.[a]

Equations	1	2	3	4	5
Intercept	-24.59[e]	-24.58[e]	-2.18[e]	-25.78[e]	-25.00[e]
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Standardized	-0.29[d]	-0.26[d]	-0.32[e]	-0.31[d]	-0.30[d]
Prediction Error	(0.04)	(0.03)	(0.01)	(0.02)	(0.03)
CEO Age	6.61[e]	5.59[e]		6.57[e]	6.64[e]
	(0.01)	(0.01)		(0.01)	(0.01)
Shareholder	-0.23		-0.08		
Lawsuits	(0.62)		(0.85)		
Shareholder	-0.72[d]		-0.56[c]	-0.77[d]	-0.71[d]
Proposal	(0.03)		(0.07)	(0.02)	(0.03)
Takeover	1.93[e]		1.85[e]	2.00[e]	1.91[e]
Attempt	(0.01)		(0.01)	(0.01)	(0.01)
Proxy	0.54		0.68		
Fight	(0.45)		(0.32)		
Restructuring	1.18[c]		1.00[c]		1.20[d]
	(0.06)		(0.09)		(0.04)
Log Likelihood	-131.80	-151.78	-143.08	-134.43	-132.17

[a]P-values are in parentheses.
[b]Top management turnover is the turnover of top managers in the three years following the poison pill adoption. Top management turnover is assumed to take place on the date of the annual meeting following the actual turnover.
[c]Significant at ten percent.
[d]Significant at five percent.
[e]Significant at one percent.

Although these three variables are not significant, they appear to be related to the prediction error. Regression 5 adds the restructuring dummy and shows that omisson of the restructuring dummy did not have the same effects as omission of lawsuit and proxy dummy variables. The significance in the prediction error estimates across the regressions provides further support for the Internal Labor Market Hypothesis as the turnover of divergent managers is greater than that of managers whose interests converge to those of the shareholders. The results, though not the variable estimates are the same as for the ordinary least-square estimates. Using probit the values of all significant variables are larger than with ordinary least square estimates.

In Table 9, the censored regressions provide evidence consistent with the story. Generally, a higher standardized prediction error or the presence of a shareholder proposal are associated with longer survival whereas a proxy contest, a takeover contest or older managers are associated with shorter survival.

Regression 1 provides the full model where the positive coefficient on the prediction error suggests top managers survive longer when they behave in shareholders' best interests. This evidence is consistent wtih the Internal Labor Market Effectiveness Hypothesis. The negative coefficient on age suggests retirement plays a part in the survival time of the top managers. A takeover or a proxy fight are also associated with shorter survival times suggesting the external labor market can discipline top managers either directly or indirectly by influencing the board. Much as in the ordinary least squares results, the positive sign on the shareholder proposal suggests a proposal may motivate the board to monitor the top manager without replacing him.

Table 9
Censored Regression on Top Manager Turnover

Censored regression of factors explaining top manager turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Regressions use a Weibull distribution. Reported figures are based on information contained in firms' annual proxy statements and 10K reports.[a]

Equations	1	2	3	4	5
Intercept	12.47[e]	14.03[e]	2.08[e]	11.97[e]	11.98[e]
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Standardized	0.08[c]	0.08[c]	0.09[c]	0.09[c]	0.09[c]
Prediction Error	(0.09)	(0.08)	(0.06)	(0.06)	(0.06)
CEO Age	-2.59[e]	-1.98[e]		-2.47[e]	-2.47[e]
	(0.01)	(0.01)		(0.01)	(0.01)
Shareholder	0.09		-0.01		
Lawsuits	(0.53)		(0.96)		
Shareholder	0.32[d]		0.28[d]	0.29[d]	0.26[d]
Proposal	(0.02)		(0.04)	(0.02)	(0.04)
Takeover	-0.56[e]		-0.66[e]	-0.60[e]	-0.56[e]
Attempt	(0.01)		(0.01)	(0.01)	(0.01)
Proxy	-0.36[c]		-0.31		
Fight	(0.09)		(0.16)		
Restructuring	-0.14		-0.14		-0.16
	(0.43)		(0.42)		(0.34)
Log-Likelihood	-198.51	-213.40	-209.35	-200.32	-199.89
Scale	0.56	0.59	0.57	0.56	0.56

[a]P-values are in parentheses.
[b]Top management turnover is the turnover of top managers in the three years following the poison pill adoption. Top management turnover is assumed to take place on the date of the annual meeting following the actual turnover.
[c]Significant at ten percent by a chi-squared test.
[d]Significant at five percent by a chi-squared test.
[e]Significant at one percent by a chi-squared test.

Regression 2 shows the significance of the estimates for the prediction error, intercept, and age are robust to absence control methods. The age variable does change somewhat in the equation suggesting the control variables may be influencing the age estimate. Further evidence of such influence is found in regression 3. When age is dropped, the proxy fight dummy is no longer significant suggesting some correlation between the two variables. Proxy fights appear to be more effective with older top managers suggesting the managers are unable to entrench. Regressions 4 and 5 show the age coefficient is not strongly affected by the restructuring, takeover, or proposal variables. The prediction error is more significant than in the full model when proxy fights and lawsuits are omitted. The survival times appear to be consistent with the probit analyses and the Internal Labor Market Effectiveness Hypothesis.

In Table 10, the second stage of the three-stage least-square regression, the prediction error loses some of it's significance, but that significance is regained in Table 11 in the full 3-stage least squares regression. The other results are consistent with the ordinary least squares results of Table 7. The F-statistic for all equations is significant and regressions 1 and 5 predict one quarter of the top manager turnover. Regression 1 provides a significant negative intercept, and a positive and significant age estimate suggesting retirement does influence the rate of turnover. Shareholder proposals are again associated with less turnover, and takeovers with higher turnover. Even without the control variables, the standardized prediction error is not significant as shown in Regression 2. Regression 2, however, does lose a great deal of explanatory power from the full model. Regression 3 shows once again that the effects of top manager age is consistent across firms as when age

Table 10
Two-stage Least Squares Regression on Top Manager Turnover

Two-stage least squares regression of factors explaining top manager turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Instruments used include board structure variables, blockholder ownership and the fraction of long-term debt used by the firm. Reported figures are based on information contained in firms' annual proxy statements and 10K reports.[a]

Equations	1	2	3	4	5
Intercept	-3.55[e]	-4.15[e]	0.32[e]	-3.40[e]	-3.48[e]
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Standardized	-0.16	-0.17	-0.13	-0.17[c]	-0.15
Prediction Error	(0.14)	(0.14)	(0.20)	(0.02)	(0.15)
CEO Age	0.97[e]	1.13[e]		0.93[e]	0.95[e]
	(0.01)	(0.01)		(0.01)	(0.01)
Shareholder	-0.04		-0.02		
Lawsuits	(0.64)		(0.87)		
Shareholder	-0.13[c]		-0.12	-0.14[c]	-0.12[c]
Proposal	(0.09)		(0.13)	(0.06)	(0.10)
Takeover	0.41[e]		0.45[e]	0.44[e]	0.42[e]
Attempt	(0.01)		(0.01)	(0.001)	(0.01)
Proxy	0.18		0.17		
Fight	(0.25)		(0.28)		
Restructuring	0.20		0.17		0.18
	(0.15)		(0.21)		(0.19)
R-squared	0.24	0.08	0.20	0.22	0.24
F-statistic	7.33[e]	7.29[e]	6.79[e]	11.94[e]	10.23[e]

[a] P-values are in parentheses.
[b] Top management turnover is the turnover of top managers in the three years following the poison pill adoption. Top management turnover is assumed to take place on the date of the annual meeting following the actual turnover.
[c] Significant at ten percent.
[d] Significant at five percent.
[e] Significant at one percent.

is dropped, the intercept becomes positive, although still significant. In equation 4 the standardized prediction error is significantly negative suggesting turnover is higher among divergent top managers when controlling for proposals and takeovers, but when restructuring is added back to the model in regression 5, the prediction error is again not significant.

In Table 11, the top segment is the third stage estimate of managerial turnover using the standardized prediction error as an estimate. The bottom section is the co-estimated equation for the number of seats held by the top manager on other boards. In regression 1, the full model is similar to that of the second stage but now the prediction error is signficantly negative. The proxy variable and the restructuring variable also become positive.

Regression 2 shows the significance of the prediction error is robust to the elimination of other control methods. However, in regression 3 although the prediction error is still significantly negative, it is a much smaller value suggesting there is some interaction between age and the predicted prediction error. Regressions 4 and 5 show the prediction error's coefficient is robust to alternate specifications of other control methods. The proposal variables and takeover variables are significant throughout while the proxy and restructuring variables lose significance when age is excluded. Although the evidence is mixed, the three-stage least squares regression results generally support the Internal Labor Market Effectiveness Hypothesis. Consistent across all specifications, the number of seats is increasing in the debt to equity ratio and in the number of outside directors. The higher debt

Table 11
Three-stage Least Squares Regression on Top Manager Turnover

Three-stage regression of factors explaining top manager turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986.[a]

Turnover	1	2	3	4	5
Intercept	-4.04[e]	-4.59[e]	0.33[e]	-3.90[e]	-3.89[e]
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Standardized Prediction Error	-0.23[d]	-0.24[d]	-0.08[c]	-0.25[e]	-0.21[d]
	(0.042)	(0.03)	(0.09)	(0.01)	(0.03)
CEO Age	1.09[e]	1.24[e]		1.06[e]	1.05[e]
	(0.01)	(0.01)		(0.01)	(0.01)
Shareholder Lawsuits	-0.06		-0.02		
	(0.50)		(0.80)		
Shareholder Proposal	-0.15[d]		-0.12[c]	-0.16[d]	-0.14[c]
	(0.05)		(0.10)	(0.03)	(0.07)
Takeover Attempt	0.40[e]		0.45[e]	0.43[e]	0.42[e]
	(0.01)		(0.01)	(0.01)	(0.01)
Proxy Fight	0.26[c]		0.22		
	(0.10)		(0.17)		
Restructuring	0.23[c]		0.18		0.19
	(0.10)		(0.17)		(0.14)
Seats					
Intercept	-1.32[d]	-1.27[d]	-1.29[d]	-1.32[d]	-1.30[d]
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Debt to Equity	2.08[e]	2.07[e]	2.14[e]	2.11[e]	2.11[e]
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Outside Directors	1.38[c]	1.33[c]	1.38[c]	1.37[c]	1.36[c]
	(0.09)	(0.10)	(0.09)	(0.09)	(0.10)
Grey Directors	0.86	0.76	0.75	0.82	0.80
	(0.33)	(0.39)	(0.41)	(0.35)	(0.37)
Blockholdings	0.01	0.01	0.01	0.01	0.01
	(0.67)	(0.67)	(0.77)	(0.68)	(0.70)

[a]P-values are in parentheses.
[b]Top management turnover is the turnover of top managers in the three years following the poison pill adoption. Top management turnover is assumed to take place on the annual meeting for the year.
[c]Significant at ten percent. [d]Significant at five percent. [e]Significant at one percent.

to equity ratio suggests top managers in more highly leveraged firms are more likely to sit on more other boards in order to cement relations with suppliers, customers, banks, and other relevant parties. This cementing of relations allows the firm to bear less risk on supply and demand and reduces the chance for a financial crisis. The results of the regression on seats, however, are not robust. Also, the more outside directors on the board, the greater chance the top manager will be on other boards as top managers of firms "exchange" seats to confirm a working relation.

The results of the survival analysis are summarized in figure 1. Divergent top managers, those in firms that had a negative prediction error on announcement of a poison pill, lose their positions at a higher rate than convergent top managers and the rate increases over time. All three tests are significant at ten percent. Figure 2 provides an area graph of the same results. Figure 3 divides the whole sample up into five quintiles with quintile 1 having the most divergent firms. Strongly divergent firms appear to be at least partially entrenched. Firms in the second quintile appear to be very divergent but were unable to entrench successfully. The most convergent firms have the least level of turnover.

Regression Estimates of Board Turnover

In table 12, the reaction to the poison pill announcement is not significant for explaining director turnover suggesting boards do not monitor themselves. The results suggest some external control methods lead to director turnover but that the absense of internal monitoring allows for entrenchment.

Table 12
Ordinary Least Squares Regression on Total Director Turnover

Ordinary least squares regression of factors explaining total director turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Reported figures are based on information contained in firms' annual proxy statements and 10K reports.[a]

Equations	1	2	3	4	5
Intercept	-0.19	-0.65	0.28[e]	-0.53	-0.55
	(0.80)	(0.38)	(0.01)	(0.48)	(0.46)
Standardized	-0.01	-0.01	-0.01	-0.01	-0.01
Prediction Error	(0.41)	(0.50)	(0.37)	(0.44)	(0.46)
Director Age	0.11	0.23		0.20	0.21
	(0.53)	(0.21)		(0.27)	(0.26)
Shareholder	0.08[e]		0.08[e]		
Lawsuits	(0.01)		(0.01)		
Shareholder	0.03		0.03	0.03	0.03[c]
Proposal	(0.20)		(0.17)	(0.12)	(0.10)
Takeover	-0.08[e]		-0.08[e]	-0.05[d]	-0.06[d]
Attempt	(0.01)		(0.01)	(0.02)	(0.02)
Proxy	0.04		0.04		
Fight	(0.35)		(0.33)		
Restructuring	-0.01		-0.01		0.03
	(0.98)		(0.95)		(0.43)
R-squared	0.08	0.01	0.08	0.04	0.04
F-statistic	3.02[e]	1.13	3.46[e]	2.44[d]	2.04[c]

[a] P-values are in parentheses.
[b] Board turnover is the turnover in the three years following the poison pill adoption. Board turnover does not include turnover of top managers and is assumed to take place on the date of the annual meeting following the actual turnover.
[c] Significant at ten percent.
[d] Significant at five percent.
[e] Significant at one percent.

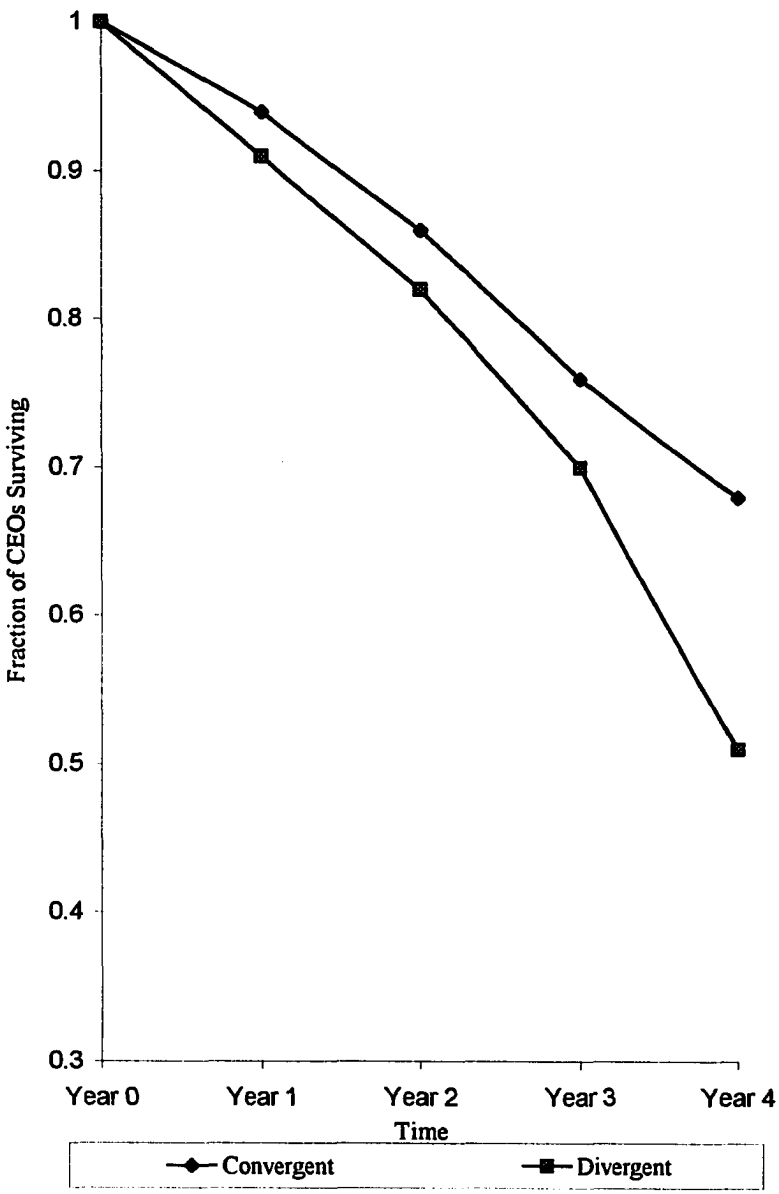

Figure 1
Top Manager Survival

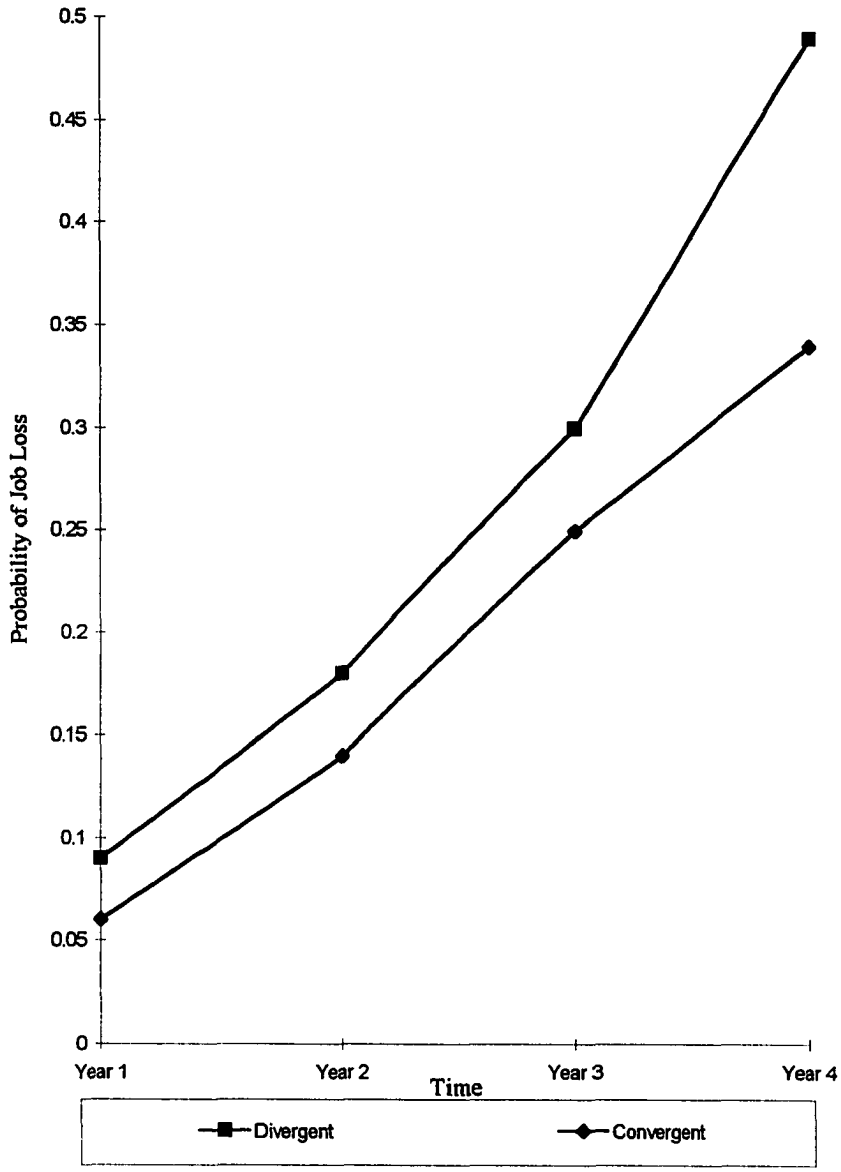

Figure 2
Cumulative Top Manager Turnover

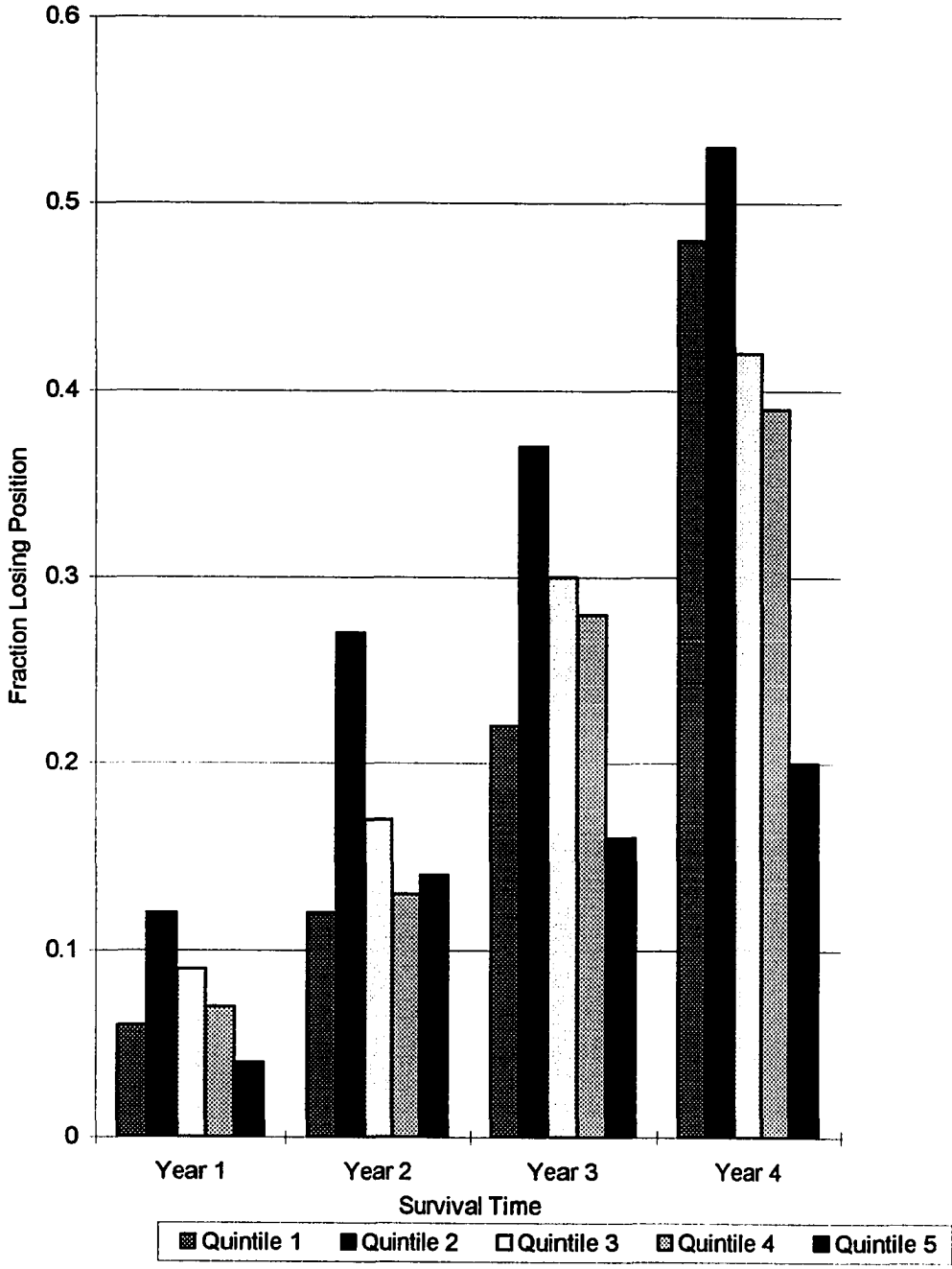

Figure 3
Top Manager Turnover by Quintile

entrenched boards. With an entrenched board, director turnover should be less frequent so if one reason for takeovers is to evict entrenched directors, a negative coeficient would be expected.[42]

Regression 2 shows age and the measure of board quality do not explain total board turnover even if the other control variables are not used. Equation 2 is also the only equation without a significant F-statistic suggesting most of the explanatory power is in the control variables. Again, director turnover is significantly driven by external factors in order to prevent entrenchment. In regression 3, dropping the age variable makes the intercept positive and significant. As with top manager turnover, it appears that average age has a consistent effect on turnover across all firms. The lawsuit and takeover parameters are invariate to the age specification. Regression 4 suggests the takeover parameter estimate was fairly robust to exclusion of alternate control variables. The R-squared value is only half of the value when shareholder lawsuits and proxy fights are included. Finally, regression 5 suggests that shareholder proposals are marginally significant and may be associated with higher director turnover. The takeover coefficient is still negative and significant suggesting takeovers are associated with low board turnover prior to the bid. It appears, then, that the board is unable to monitor itself and must depend on outside sources like takeovers and shareholder lawsuits to provide monitoring skills. As mentioned before, the estimates of the shareholder proposal variable weakly support the monitoring hypothesis. Finally, turnover is not significantly higher for the age variable alone, but the

[42] When comparing director turnover for successful takeovers against director turnover for attempted turnover, the turnover for successful takeovers is significantly higher. This further suggests entrenched directors are targets of takeover attempts but only successful takeovers are able to eliminate directors.

intercept is higher when age is not controlled for suggesting that voluntary retirement is an important factor determining total board turover.

The ordinary least squares regressions for director turnover have much lower R-squared values than for top manager turnover, but the F-statistic is significant for most of the regressions. The evidence suggests that outside influences are a major factor determining board turnover.

In Table 13, the survival analysis suggests similar results. In regression 1, the prediction error is not significant suggesting shareholder's views on the board's monitoring ability is not associated with differing levels of turnover. Lawsuits, however, are associated with a reduced length of time directors serve suggesting outside forces monitor directors. No other variable has a significant impact on survival. In particular, the lack of significance in director age suggests mandartory retirement is not a driving factor in director lifetime. If mandatory retirement often claimed directors, an older board would be associated with a shorter survival time on average even if turnover is no higher. Regression 3, however, suggests that even when age is not considereed survival time does not change significantly. Regression 2 suggests that even without control variables, the prediction error and age are not significant. Shareholder proposals also appear to be marginally significant and leading to shorter director survival times in regression 4. Adding restructuring in regression 5 does not change any of the other variables or the log-likelihood function.

Table 14 reports the second stage of the three-stage least squares regression with the prediction error derived from instruments. The results are consistent with ordinary least squares regression. In regression 1, the use of instrumental variables to estimate the

Table 13
Censored Regression on Total Director Turnover

Censored regression of factors explaining total director turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Regressions use a Weibull distribution. Reported figures are based on information contained in firms' annual proxy statements and 10K reports.[a]

Equations	1	2	3	4	5
Intercept	1.22[e]	1.29[e]	1.30[e]	1.25[e]	1.25[e]
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Standardized	0.01	-0.01	0.01	-0.01	-0.01
Prediction Error	(0.62)	(0.98)	(0.64)	(0.99)	(0.99)
Director Age	0.02	-0.01		0.01	0.01
	(0.75)	(0.99)		(0.83)	(0.83)
Shareholder	-0.05[e]		-0.05[e]		
Lawsuits	(0.01)		(0.01)		
Shareholder	-0.02		-0.02	-0.02[c]	-0.02[c]
Proposal	(0.18)		(0.18)	(0.10)	(0.10)
Takeover	-0.02		-0.02	-0.02	-0.02
Attempt	(0.36)		(0.37)	(0.16)	(0.17)
Proxy	0.01		0.01		
Fight	(0.87)		(0.86)		
Restructuring	0.03		0.03		0.01
	(0.35)		(0.34)		(0.99)
Log-Likelihood	124.32	119.07	124.27	121.35	121.35
Scale	0.10	0.10	0.10	0.10	0.10

[a]P-values are in parentheses.
[b]Board turnover is the turnover in the three years following the poison pill adoption. Board turnover does not include turnover of top managers and is assumed to take place on the date of the annual meeting following the actual turnover.
[c]Significant at ten percent by a chi-squared test.
[d]Significant at five percent by a chi-squared test.
[e]Significant at one percent by a chi-squared test.

Table 14
Two-stage Regression on Total Director Turnover

Two-stage least squares regression of factors explaining total director turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Instruments used include board structure variables, blockholder ownership and the fraction of long-term debt used by the firm. Reported figures are based on information contained in firms' annual proxy statements and 10K reports.[a]

Equations	1	2	3	4	5
Intercept	-0.01	-0.55	0.27[e]	-0.56	-0.57
	(0.99)	(0.53)	(0.01)	(0.52)	(0.52)
Standardized	0.02	0.02	0.02	0.02	0.02
Prediction Error	(0.60)	(0.55)	(0.60)	(0.51)	(0.50)
Director Age	0.07	0.20		0.21	0.21
	(0.75)	(0.34)		(0.34)	(0.34)
Shareholder	0.08[e]		0.09[e]		
Lawsuits	(0.01)		(0.01)		
Shareholder	0.01		0.01	0.01	0.01
Proposal	(0.76)		(0.74)	(0.62)	(0.61)
Takeover	-0.09[e]		-0.09[e]	-0.06[d]	-0.06[d]
Attempt	(0.01)		(0.01)	(0.05)	(0.04)
Proxy	-0.08		0.08		
Fight	(0.16)		(0.14)		
Restructuring	-0.01		-0.01		0.01
	(0.79)		(0.78)		(0.89)
R-squared	0.09	0.01	0.09	0.03	0.03
F-statistic	2.20[d]	0.65	2.56[d]	1.40	1.11

[a]P-values are in parentheses.
[b]Board turnover is the turnover in the three years following the poison pill adoption. Board turnover does not include turnover of top managers and is assumed to take place on the date of the annual meeting following the actual turnover.
[c]Significant at ten percent.
[d]Significant at five percent.
[e]Significant at one percent.

standardized prediction error does not change any significant variables. The explanatory power is slightly higher than with ordinary least squares, but the regression is less significant than its corresponding ordinary least squares regression. Regression 2 does not significantly change the ordinary least squares variables, but again the F-statistic is lower than its comparable ordinary least squares value. In regression 3, the estimates are consistent with the ordinary least squares value where takeover attempts are associated with lower director turnover but shareholder lawsuits are associated with higher turnover, but again the F-value is lower. In regressions 4 and 5 the shareholder proposal variable is not significant and the regressions are, unlike their ordinary least squares counterparts, not significant.

In the third stage, Table 15, the results of the second stage are run together with an estimate of board seats by all directors. The results of the third stage regressions are not noticeably different from the second stage results. The results of the seats regression suggest that the level of debt in the firm is positively associated with the number of seats directors hold on other boards. This may be because debt acts as an alternate monitor allowing directors to expend less effort monitoring and allowing them to sit on more seats. It could also be that firms with higher debt are more likely to be in industries or groups of firms where interlocking boards are more common.

Regression Estimates of Inside Director Turnover

In table 16, the reaction to the poison pill announcement is significant at five percent in explaining inside director turnover. This suggests inside directors on divergent boards lost a position more often than on convergent boards, much as top managers do. In

Table 15
Three-stage Regression on Total Director Turnover

Three-stage regression of factors explaining total director turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986.[a]

Equations	1	2	3	4	5
Intercept	-0.15	-0.38	0.27[c]	-0.36	-0.35
	(0.86)	(0.66)	(0.01)	(0.68)	(0.69)
Standardized Prediction Error	0.03	0.04	0.03	0.04	0.04
	(0.35)	(0.28)	(0.35)	(0.24)	(0.23)
Director Age	0.03	0.16		0.16	0.16
	(0.89)	(0.45)		(0.46)	(0.47)
Shareholder Lawsuits	0.09[c]		0.09[c]		
	(0.01)		(0.01)		
Shareholder Proposal	0.01		0.01	0.02	0.02
	(0.67)		(0.66)	(0.52)	(0.052)
Takeover Attempt	-0.09[c]		-0.09[c]	-0.06[d]	-0.06[d]
	(0.01)		(0.01)	(0.04)	(0.04)
Proxy Fight	0.07		0.07		
	(0.23)		(0.22)		
Restructuring	-0.02		-0.02		0.01
	(0.71)		(0.70)		(0.97)
Seats					
Intercept	-1.11[d]	-1.12[d]	-1.11[d]	-1.12[d]	-1.11[d]
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Debt to Equity	1.91[c]	1.88[c]	1.90[c]	1.86[c]	1.85[c]
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Outside Directors	1.24	1.27	1.24	1.28	1.28
	(0.14)	(0.12)	(0.14)	(0.12)	(0.12)
Grey Directors	0.59	0.61	0.59	0.62	0.62
	(0.52)	(0.49)	(0.51)	(0.49)	(0.49)
Blockholdings	0.01	0.01	0.01	0.01	0.01
	(0.92)	(0.93)	(0.92)	(0.95)	(0.95)

[a]P-values are in parentheses.
[b]Board turnover is the turnover in the three years following the poison pill adoption. Board turnover does not include turnover of top managers and is assumed to take place on the date of the following meeting.
[c]Significant at ten percent. [d]Significant at five percent. [e]Significant at one percent.

Table 16
Ordinary Least Squares Regression on Inside Director Turnover

Ordinary least squares regression of factors explaining inside director turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Reported figures are based on information contained in firms' annual proxy statements and 10K reports.[a]

Equations	1	2	3	4	5
Intercept	-4.37[e]	-4.63[e]	0.33[e]	-4.35[e]	-4.39[e]
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Standardized	-0.05[d]	-0.05[d]	-0.05[d]	-0.05[d]	-0.05[d]
Prediction Error	(0.04)	(0.03)	(0.02)	(0.03)	(0.03)
Director Age	1.18[e]	1.25[e]		1.17[e]	1.18[e]
	(0.01)	(0.01)		(0.01)	(0.01)
Shareholder	-0.03		0.01		
Lawsuits	(0.72)		(0.99)		
Shareholder	-0.13[d]		-0.11[c]	-0.14[d]	-0.12[d]
Proposal	(0.03)		(0.08)	(0.02)	(0.04)
Takeover	0.37[e]		0.39[e]	0.40[e]	0.37[e]
Attempt	(0.01)		(0.01)	(0.01)	(0.01)
Proxy	0.13		0.15		
Fight	(0.33)		(0.27)		
Restructuring	0.21[d]		0.19[c]		0.22[d]
	(0.05)		(0.08)		(0.03)
R-squared	0.25	0.11	0.18	0.23	0.25
F-statistic	11.28[e]	14.93[e]	8.56[e]	18.14[e]	15.65[e]

[a]P-values are in parentheses.
[b]Board turnover is the turnover in the three years following the poison pill adoption. Board turnover does not include turnover of top managers and is assumed to take place on the date of the annual meeting following the actual turnover.
[c]Significant at ten percent.
[d]Significant at five percent.
[e]Significant at one percent.

regression 1 the intercept is negative and significant while age is positive and significant. Shareholder proposals are associated with lower inside director turnover much as with top managers. Similarly, I argue this indicates pressure is being applied to the board to monitor managers better, but the pressure is meant to have the board encourage better executive performance and therefore is not designed primarily to force inside director turnover. Inside director turnover is also positively associated with takeover atttempts and restructurings, and age much as is top manager turnover. The intercept is negative and significant in every regression. Regression 2 shows the parameter estimates of the prediction error, age and the intercept are robust to whether other control variables are included. The F-statistic also suggests these three variables provide a very significant model even though it explains less than half the variance explained in regression 1. The top manager age is significantly positive in each equation, but it is clear from regression 3 the age is very strongly negatively related to the intercept. Regression 4 suggests dropping lawsuits, restructuring and proxy fights increase F-statistic of the regression although adding a significant variable in regression 5 reduces that statistic somewhat. It could be the inside directors tag along with the top manager and his fortune is theirs. It could also be the case that inside directors have been added before an expected retirement date and are removed in the years following a top manager change.[43] The consistency of the proposal variables and the takeover variables across top managers and inside directors suggest that inside director turnover is lower when a shareholder proposal is introduced, but higher in restructurings, takeovers and as age

[43] The latter hypothesis is a predicted effect of the Tournament Hypothesis where managers give up some surplus to the top job for the right to be able to compete for that job in the future. The Tournament Hypothesis has been invoked to explain the large disparity between the income of a top manager and his immediate subordinates.

increases. These suggest inside directors in divergent firms may be entrenching and are being pressured by various control methods, both internal and external to leave their board position at a higher rate.

Table 17 suggests inside directors are being forced out more quickly, on the margin, by shareholder lawsuits and takeovers. Equation 1 finds both these control variables are associated with a shorter inside director survival time. Equation 2 suggests both the ange and prediction error are not significant when taken alone. Dropping age in equation 3 does not significantly change any survival time variables, but in equations 4 and 5 the takeover variable is negative and significant suggesting inside directors have a shorter survival time in firms that will be a takeover target in the near future.

The multi-stage regressions in Tables 18 and 19 find shareholder lawsuits and proxy contests monitor boards by leading to higher inside director turnover, although takeovers lose significance in the regression.

In equation 1 both these control variables are positive and significant suggesting inside directors are more likely to leave if they are subject ot a shareholder proposal or a proxy fight. Equation 2 has no significant variables, but equation 3 provides the same change to the intercept when director age is removed. Equations 4 and 5 provide no further evidence on significant factors. This evidence does not strongly support the evidence in the ordinary least squares regression. Again, the proxy for board quality is not significant suggesting the board does not effectively self-monitor.

The third stage regression provides parameter estimates for seats that are consistent with the earlier reported significance while also provideing parameter estimates. Consistent

Table 17
Censored Regression on Inside Director Turnover

Censored regression of factors explaining inside director turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Regressions use a Weibull distribution. Reported figures are based on information contained in firms' annual proxy statements and 10K reports.[a]

Equations	1	2	3	4	5
Intercept	1.36[e]	1.71[e]	1.38[e]	1.49[e]	1.46[e]
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Standardized	0.01	0.01	0.01	0.01[c]	0.01
Prediction Error	(0.38)	(0.54)	(0.37)	(0.50)	(0.54)
Director Age	0.01	-0.09		-0.03[e]	-0.02
	(0.98)	(0.51)		(0.83)	(0.87)
Shareholder	-0.09[d]		-0.09[d]		
Lawsuits	(0.02)		(0.02)		
Shareholder	-0.04		-0.04	-0.05	-0.05
Proposal	(0.22)		(0.22)	(0.15)	(0.14)
Takeover	-0.07[c]		-0.07[c]	-0.09[e]	-0.09[d]
Attempt	(0.06)		(0.06)	(0.01)	(0.02)
Proxy	-0.04		-0.04		
Fight	(0.55)		(0.55)		
Restructuring	0.02		0.02		-0.03
	(0.71)		(0.71)		(0.61)
Log-Likelihood	-80.93	-87.74	-80.93	-83.81	-83.68
Scale	0.20	0.21	0.20	0.20	0.20

[a]P-values are in parentheses.
[b]Board turnover is the turnover in the three years following the poison pill adoption. Board turnover does not include turnover of top managers and is assumed to take place on the date of the annual meeting following the actual turnover.
[c] Significant at ten percent by a chi-squared test.
[d] Significant at five percent by a chi-squared test.
[e] Significant at one percent by a chi-squared test.

Table 18
Two-stage Regression on Inside Director Turnover

Two-stage least squares regression of factors explaining inside director turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Instruments used include board structure variables, blockholder ownership and the fraction of long-term debt used by the firm. Reported figures are based on information contained in firms' annual proxy statements and 10K reports.[a]

Equations	1	2	3	4	5
Intercept	-1.17	-2.20	0.30[e]	-2.19	-2.20
	(0.47)	(0.17)	(0.01)	(0.17)	(0.17)
Standardized	-0.03	-0.03	-0.03	-0.03	-0.02
Prediction Error	(0.68)	(0.64)	(0.69)	(0.64)	(0.82)
Director Age	0.36	0.62		0.62	0.62
	(0.36)	(0.11)		(0.12)	(0.12)
Shareholder	0.14[d]		0.15[e]		
Lawsuits	(0.02)		(0.01)		
Shareholder	0.10		0.01	0.01	0.02
Proposal	(0.93)		(0.87)	(0.96)	(0.75)
Takeover	-0.05		-0.05	0.01	0.01
Attempt	(0.36)		(0.35)	(0.84)	(0.98)
Proxy	0.18[c]		0.19[c]		
Fight	(0.08)		(0.06)		
Restructuring	0.10		0.09		0.13
	(0.27)		(0.28)		(0.15)
R-squared	0.08	0.02	0.08	0.22	0.03
F-statistic	2.10[d]	1.38	2.32[d]	0.69[e]	0.97

[a] P-values are in parentheses.

[b] Board turnover is the turnover in the three years following the poison pill adoption. Board turnover does not include turnover of top managers and is assumed to take place on the date of the annual meeting following the actual turnover.

[c] Significant at ten percent.

[d] Significant at five percent.

[e] Significant at one percent.

Table 19
Three-stage Regression on Inside Director Turnover

Three-stage regression of factors explaining inside director turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986 10K reports.[a]

	1	2	3	4	5
Turnover					
Intercept	-1.14	-2.18	0.30[e]	-2.17	-2.06
	(0.48)	(0.17)	(0.01)	(0.18)	(0.20)
Standardized	-0.02	-0.03	-0.02	-0.03	-0.01
Prediction Error	(0.71)	(0.67)	(0.74)	(0.66)	(0.98)
Director Age	0.35	0.62		0.61	0.58
	(0.37)	(0.11)		(0.12)	(0.14)
Shareholder	0.14[d]		0.15[e]		
Lawsuits	(0.02)		(0.01)		
Shareholder	0.01		0.01	0.01	0.02
Proposal	(0.93)		(0.86)	(0.95)	(0.71)
Takeover	-0.05		-0.05	0.01	0.01
Attempt	(0.37)		(0.35)	(0.84)	(0.97)
Proxy	0.18[c]		0.19[c]		
Fight	(0.08)		(0.07)		
Restructuring	0.10		0.09		0.12
	(0.28)		(0.29)		(0.16)
Seats					
Intercept	-1.16[d]	-1.16[d]	-1.16[d]	-1.15[d]	-1.19[d]
	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)
Debt to Equity	2.13[e]	2.13[e]	2.11[e]	2.13[e]	2.04[e]
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Outside Directors	1.22	1.22	1.24	1.22	1.33
	(0.15)	(0.14)	(0.14)	(0.15)	(0.11)
Grey Directors	0.56	0.56	0.57	0.56	0.63
	(0.54)	(0.54)	(0.53)	(0.54)	(0.49)
Blockholdings	0.01	0.01	0.01	0.01	0.01
(0.87)		(0.87)	(0.87)	(0.87)	(0.88)

[a]P-values are in parentheses.
[b]Board turnover is the turnover in the three years following the poison pill adoption.
[c]Significant at ten percent [d]Significant at five percent. [e]Significant at one percent

with the ordinary least squares regressions both the shareholder lawsuits and proxy fight variables are positive and significant.

Regression Estimates of Outside Director Turnover

In table 20, the reaction to the poison pill announcement is not significant for explaining outside director turnover. Regression 1 shows only the takeover attempt variable is significant and negative. Neither the prediction error or director age have a significant impact on outside director turnover, and the regression has a low F-statistic. The results are the same in regression 2 where even when no control variables are included, the prediction error and age are still not significant. In regression 3, the results are consistent with other types of directors. Dropping the age variable makes the intercept positive and significant suggesting director age is rather constant across all observations, but when combined with the intercept estimated retirements are increasing in age. In equation 4, dropping the least significant control variables leads to a higher but still not significant F-statistic. The significance of the takeover attempt variable is not changed by altering the equation, and neither are the prediction error and age estimates. Finally, in regression 5 the takeover attempt coefficient estimate is robust to adding restructuring. Indeed, adding restructuring, or others of the dropped variables only reduce the F-statistic from its value in regression 4. The regression R-squares are consistently low and only the takeover attempt variable is significant. The negative coefficient on takeovers suggests takeovers occur when outside director turnover is very low suggesting the directors may be entrenched.

The results of Table 21 provide further evidence for the entrenchment of divergent

Table 20
Ordinary Least Squares Regression on Outside Director Turnover

Ordinary least squares regression of explaining outside director turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Instruments used include board structure variables, blockholder ownership and the fraction of long-term debt used by the firm. Reported figures are based on information contained in firms' annual proxy statements and 10K reports.[a]

Equations	1	2	3	4	5
Intercept	-0.78	-1.12	0.28[e]	-0.94	-0.93
	(0.52)	(0.35)	(0.01)	(0.78)	(0.44)
Standardized	0.01	0.01	0.02	0.01	0.01
Prediction Error	(0.81)	(0.67)	(0.89)	(0.75)	(0.76)
Director Age	0.26	0.34		0.30	0.32
	(0.39)	(0.24)		(0.31)	(0.30)
Shareholder	0.04		0.04		
Lawsuits	(0.41)		(0.34)		
Shareholder	-0.01		0.04	0.04	0.04
Proposal	(0.92)		(0.21)	(0.21)	(0.23)
Takeover	-0.08[d]		-0.08[d]	-0.08[c]	-0.07[c]
Attempt	(0.05)		(0.05)	(0.06)	(0.07)
Proxy	-0.01		-0.01		
Fight	(0.92)		(0.95)		
Restructuring	-0.03		-0.03		-0.02
	(0.63)		(0.59)		(0.74)
R-squared	0.03	0.01	0.03	0.03	0.03
F-statistic	1.04	0.73	1.09	1.64	1.33

[a] P-values are in parentheses.
[b] Board turnover is the turnover in the three years following the poison pill adoption. Board turnover does not include turnover of top managers and is assumed to take place on the date of the annual meeting following the actual turnover.
[c] Significant at ten percent.
[d] Significant at five percent.
[e] Significant at one percent.

Table 21
Censored Regression on Outside Director Turnover

Censored regression of factors explaining outside director turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Regressions use a Weibull distribution. Reported figures are based on information contained in firms' annual proxy statements and 10K reports.[a]

Equations	1	2	3	4	5
Intercept	1.31[e]	1.44[e]	1.38[e]	1.33[e]	1.35[e]
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Standardized	-0.02[d]	-0.02[d]	-0.02[d]	-0.02[d]	-0.02[d]
Prediction Error	(0.03)	(0.04)	(0.04)	(0.03)	(0.03)
Director Age	0.02	-0.02		0.01	0.01
	(0.88)	(0.87)		(0.91)	(0.99)
Shareholder	-0.04		-0.04		
Lawsuits	(0.31)		(0.32)		
Shareholder	-0.02		-0.02	-0.03	-0.03
Proposal	(0.47)		(0.48)	(0.22)	(0.27)
Takeover	-0.07[d]		-0.07[d]	-0.08[d]	-0.08[e]
Attempt	(0.03)		(0.03)	(0.02)	(0.01)
Proxy	-0.04		-0.04		
Fight	(0.52)		(0.52)		
Restructuring	0.06		0.06		0.04
	(0.27)		(0.26)		(0.45)
Log-Likelihood	-60.67	-65.06	-60.69	-61.72	-61.43
Scale	0.17	0.18	0.17	0.17	0.17

[a] P-values are in parentheses.
[b] Board turnover is the turnover in the three years following the poison pill adoption. Board turnover does not include turnover of top managers and is assumed to take place on the date of the annual meeting following the actual turnover.
[c] Significant at ten percent by a chi-squared test.
[d] Significant at five percent by a chi-squared test.
[e] Significant at one percent by a chi-squared test.

directors. The evidence in regression 1 suggests outside directors last significantly longer when they adopted a value-reducing poison pill and takeover attempts occur in firms with lower outside director turnover prior to the bid. The estimates in regression 2 suggest that the prediction error coefficient is not strongly affected by the absense of the other control variables but the lack of difference between regressions 1 and 3 suggests age is not a significant variable predicting outside turnover. In regressions 4 and 5 the prediction error coefficient and takeover attempt coefficient are robust to the inclusion or exclusion of control variables that may be systematically associated with takeover attempts.

Table 22 reports the second stage of the three-stage least squares regression with the prediction error derived from instruments. The results are similar to, although overall less significant than, the two-stage regressions explaining total director turnover. In regression 1, outside director turnover is higher around shareholder lawsuits and lower before a takeover attempt. These coefficents, along with the lack of significance in the prediction error coefficient suggest again inside factors do not monitor directors, but rather shareholder lawsuits trigger higher turnover and low director turnover is associated with more takeover attempts. Regression 2 excludes all external control variables and the regression has almost no explanatory power. In regression 3, takeover attempts are again associated with lower director turnover and shareholder lawsuits are associated with higher turnover, and the lack of the age variable again causes the intercept to become positive and significant, but the F-value is not significant. In regressions 4 and 5 removing control variables that may be associated with takeover attempts reduces the significance of the takeover attempt variable while at the same time reducing the explanatory power of the regressions and the F-statistic.

Table 22
Two-stage Regression on Outside Director Turnover

Two-stage least squares regression of factors explaining outside director turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Reported figures are based on information contained in firms' annual proxy statements and 10K reports.[a]

Equations	1	2	3	4	5
Intercept	0.74	0.24	0.33[e]	0.24	0.25
	(0.57)	(0.85)	(0.01)	(0.85)	(0.85)
Standardized	0.01	0.02	0.01	0.03	0.02
Prediction Error	(0.82)	(0.67)	(0.28)	(0.63)	(0.74)
Director Age	-0.11	0.01		0.01	0.01
	(0.73)	(0.98)		(0.97)	(0.98)
Shareholder	0.08[c]		0.08[c]		
Lawsuits	(□.10)		(0.10)		
Shareholder	0.01		0.01	0.01	0.01
Proposal	(0.92)		(0.94)	(0.71)	(0.85)
Takeover	-0.09[d]		-0.09[d]	-0.07	-0.06
Attempt	(0.05)		(0.05)	(0.12)	(0.15)
Proxy	0.05		0.04		
Fight	(0.59)		(0.61)		
Restructuring	-0.08		-0.08		-0.06
	(0.24)		(0.24)		(0.37)
R-squared	0.04	0.01	0.04	0.02	0.02
F-statistic	0.99	0.10	1.15	0.69	0.72

[a] P-values are in parentheses.
[b] Board turnover is the turnover in the three years following the poison pill adoption. Board turnover does not include turnover of top managers and is assumed to take place on the date of the annual meeting following the actual turnover.
[c] Significant at ten percent.
[d] Significant at five percent.
[e] Significant at one percent.

In the third stage, Table 23, the results of the second stage are run together with an estimate of board seats by all directors. The results of the third stage regressions are not noticeably different from the second stage results. Similar to the total board results, the seats regression suggest that the level of debt in the firm is positively associated with the number of seats directors hold on other boards.

Overall, it appears that shareholder suits on control matters, while often rejected by the courts, are still associated with eliminating directors. Much like with the whole board, it appears that outside directors depend on outside forces to monitor their behavior.

Regression Estimates of Grey Director Turnover

In table 24, the reaction to the poison pill announcement is not significant for explaining grey director turnover. Regression 1 shows variable is significant. Neither the prediction error or director age have a significant impact on outside director turnover, and the regression has a low F-statistic. The results are the same in regression 2 where even when no control variables are included, the prediction error and age are still not significant. In regression 3, the results are consistent with other types of directors. Dropping the age variable makes the intercept positive and significant suggesting director age is rather constant across all observations, but when combined with the intercept estimated retirements are increasing in age. In regression 4, dropping the control variables associated with takeover attempts does not change the lack of significance. Adding restructuring in regression 5 suggests the marginal significance of the coefficient is derived from the absense

Table 23
Three-stage Regression on Outside Director Turnover

Three-stage regression of factors explaining outside director turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986.[a]

	1	2	3	4	5
Turnover					
Intercept	0.78	0.35	0.28[e]	0.38	0.33
	(0.55)	(0.79)	(0.01)	(0.77)	(0.80)
Standardized Prediction Error	0.02	0.04	0.02	0.04	0.03
	(0.76)	(0.51)	(0.77)	(0.46)	(0.63)
Director Age	-0.12	-0.02		-0.02	-0.01
	(0.70)	(0.96)		(0.94)	(0.97)
Shareholder Lawsuits	0.08[c]		0.08[c]		
	(0.09)		(0.10)		
Shareholder Proposal	0.01		0.01	0.02	0.01
	(0.90)		(0.93)	(0.66)	(0.81)
Takeover Attempt	-0.09[d]		-0.09[d]	-0.07	-0.06
	(0.05)		(0.05)	(0.11)	(0.15)
Proxy Fight	0.04		0.04		
	(0.62)		(0.64)		
Restructuring	-0.09		-0.08		-0.07
	(0.23)		(0.24)		(0.35)
Seats					
Intercept	-1.10[d]	-1.06[c]	-1.10[d]	-1.05[c]	-1.08[c]
	(0.05)	(0.06)	(0.05)	(0.06)	(0.06)
Debt to Equity	1.99[e]	1.92[e]	1.99[e]	1.90[e]	1.95[e]
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Outside Directors	1.36	1.33	1.36	1.31	1.34
	(0.11)	(0.11)	(0.11)	(0.12)	(0.11)
Grey Directors	0.27	0.26	0.27	0.25	0.27
	(0.77)	(0.78)	(0.76)	(0.78)	(0.77)
Blockholdings	0.01	0.01	0.01	0.01	0.01
	(0.90)	(0.93)	(0.90)	(0.95)	(0.92)

[a]P-values are in parentheses.
[b]Board turnover is the turnover in the three years following the poison pill adoption.
[c]Significant at ten percent [d]Significant at five percent. [e]Significant at one percent.

Table 24
Ordinary Least Squares Regression on Grey Director Turnover

Ordinary least squares regression of explaining grey director turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Reported figures are based on information contained in firms' annual proxy statements and 10K reports.[a]

Equations	1	2	3	4	5
Intercept	-1.14	-0.94	0.25[e]	-1.01	-1.11
	(0.38)	(0.47)	(0.01)	(0.44)	(0.39)
Standardized	0.01	0.01	0.01	0.01	0.01
Prediction Error	(0.36)	(0.50)	(0.41)	(0.49)	(0.45)
Director Age	0.34	0.29		0.31	0.33
	(0.29)	(0.36)		(0.33)	(0.30)
Shareholder	-0.03		-0.03		
Lawsuits	(0.48)		(0.57)		
Shareholder	-0.01		-0.01	-0.01	-0.01
Proposal	(0.76)		(0.84)	(0.68)	(0.84)
Takeover	-0.06		-0.06	-0.05	-0.06
Attempt	(0.20)		(0.19)	(0.27)	(0.17)
Proxy	0.10		0.11		
Fight	(0.19)		(0.18)		
Restructuring	0.10		0.09		0.10[c]
	(0.13)		(0.15)		(0.09)
R-squared	0.03	0.01	0.03	0.01	0.02
F-statistic	1.06	0.60	1.05	0.66	1.09

[a]P-values are in parentheses.
[b]Board turnover is the turnover in the three years following the poison pill adoption. Board turnover does not include turnover of top managers and is assumed to take place on the date of the annual meeting following the actual turnover.
[c]Significant at ten percent.
[d]Significant at five percent.
[e]Significant at one percent.

Table 25
Censored Regression on Grey Director Turnover

Censored regression of factors explaining grey director turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Regressions use a Weibull distribution. Reported figures are based on information contained in firms' annual proxy statements and 10K reports.[a]

Equations	1	2	3	4	5
Intercept	0.96[c]	0.86	1.42[e]	0.82	0.83
	(0.14)	(0.20)	(0.01)	(0.22)	(0.21)
Standardized	0.01	0.01	0.01	0.01	0.01
Prediction Error	(0.66)	(0.93)	(0.69)	(0.97)	(0.86)
Director Age	0.11	0.14		0.15	0.15
	(0.48)	(0.41)		(0.36)	(0.38)
Shareholder	-0.02		-0.02		
Lawsuits	(0.6)		(0.67)		
Shareholder	-0.01		-0.01	-0.01	-0.01
Proposal	(0.70)		(0.74)	(0.96)	(0.95)
Takeover	-0.05		-0.05	-0.05	-0.06
Attempt	(0.28)		(0.30)	(0.24)	(0.22)
Proxy	0.15[c]		0.16[c]		
Fight	(0.10)		(0.08)		
Restructuring	0.01		0.01		0.04
	(0.90)		(0.91)		(0.48)
Log-Likelihood	-113.48	-116.00	-113.73	-115.35	-115.09
Scale	0.21	0.22	0.21	0.22	0.22

[a]P-values are in parentheses.
[b]Board turnover is the turnover in the three years following the poison pill adoption.
[c]Significant at ten percent.
[d]Significant at five percent.
[e]Significant at one percent.

of the proxy fights and shareholder lawsuits variables. The regression R-squares are consistently low and only the restructuring variable is significant, and then only when certain variables are missing. The absense of significance on the prediction error coefficient suggests that much like outside directors, turnover is not affected by internal monitoring.

The results of Table 25 suggest grey director survival is dependent to some extent on age and on the existence of a proxy fight. The evidence in regression 1 suggests grey directors leave a firm sooner when the firm is a target of a proxy fight.[44] The estimates in regression 2 suggest that the prediction error coefficient is not significant, even in the absense of the other control variables. The intercept in regression 3, when age is dropped, suggests age is not a significant variable predicting outside turnover. In regressions 4 and 5 no variables are significant after dropping the control variables associated with takeover attempts.

Table 26 reports the second stage of the three-stage least squares regression with the prediction error derived from instruments. The results are similar to the ordinary least squares regression. No variables are significant in the regressions and neither are the F-statistics for the various regressions. The explanatory power of these regressions is even lower than that of the ordinary least squares.

Only the standardized prediction error in the three stage regression in Table 27 is significantly positive suggesting that grey directors lose their position less often in firms with a very negative poison pill reaction and there is some evidence of grey director entrenchment. As grey directors are generally seen as less effective monitors, it may be that

[44] Proxy fight variable, in turn, is a significant and negative variable when the prediction error is run against the prediction error. This suggests some firm's grey directors may be entrenched through interpreting the effects of the proxy variable.

Table 26
Two-stage Regresssion on Grey Director Turnover

Two-stage least squares regression of factors explaining grey director turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Instruments used include board structure variables, blockholder ownership and the fraction of long-term debt used by the firm. Reported figures are based on information contained in firms' annual proxy statements and 10K reports.[a]

Equations	1	2	3	4	5
Intercept	-0.97	-0.87	-0.42[e]	-0.93	-0.93
	(0.53)	(0.56)	(0.01)	(0.53)	(0.54)
Standardized	0.06	0.06	0.16	0.07	0.06
Prediction Error	(0.32)	(0.32)	(0.22)	(0.30)	(0.31)
Director Age	0.30	0.27		0.29	0.29
	(0.43)	(0.46)		(0.44)	(0.44)
Shareholder	-0.01		-0.01		
Lawsuits	(0.84)		(0.87)		
Shareholder	-0.01		-0.01	-0.01	-0.01
Proposal	(0.96)		(0.91)	(0.97)	(0.96)
Takeover	-0.07		-0.09	-0.07	-0.07
Attempt	(0.19)		(0.15)	(0.14)	(0.15)
Proxy	0.01		0.01		
Fight	(0.93)		(0.90)		
Restructuring	-0.01		-0.01		-0.01
	(0.94)		(0.95)		(0.90)
R-squared	0.02	0.01	0.02	0.02	0.02
F-statistic	0.54	0.78	0.52	0.94	0.75

[a]P-values are in parentheses.
[b]Board turnover is the turnover in the three years following the poison pill adoption. Board turnover does not include turnover of top managers and is assumed to take place on the date of the annual meeting following the actual turnover.
[c] Significant at ten percent.
[d] Significant at five percent.
[e] Significant at one percent.

top manager of divergent firms seek out grey directors, on the margin, as a way to limit board monitoring. In such a case, if the boards of very divergent firms do not monitor. themselves effectively, the coefficient on the prediction error would be positive for grey directors but the effect would be less significant or even zero for outside directors, consistent with the evidence.[45]

The results of top manager and board turnover suggest that top managers and directors of divergent firms attempt to entrench themselves. It appears that the board applies pressure to top managers of divergent firms forcing them to leave the firm at a higher rate than their convergent counterparts. Although inside directors do not lose their position significantly more often when they serve in a divergent firm, when the inside directors do leave, it appears the board type does explain some of the departures in a way similar to top managers. Even though outside director turnover is higher in divergent firms, there appears to be no inside pressure on outside and grey directors. Rather, outside forces like lawsuits and takeovers pressure outside directors causing them to lose their postion at a higher rate than if they were in divergent firms. It appears grey and inside directors are not forced out as frequently as outside directors. I argue this is consistent with the labor market disciplining monitors. Inside and grey directors provide non-monitoring benefits (their productivity for inside directors and relations with suppliers, customers, or consultants with grey directors) to the shareholders. whereas a primary reason for an outside director would be to monitor managerial behavior. Finally, top managers are forced out more often from

[45] There are not only more grey directors in divergent firms. but they also make up a greater percentage of the board of those firms than of convergent firms. This difference is significant at one percent.

Table 27
Three-stage Regression on Grey Director Turnover

Three-stage regression of factors explaining grey director turnover in 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986[a].

	1	2	3	4	5
Turnover					
Intercept	-0.57	-0.50	-0.29[c]	-0.50	-0.50
	(0.71)	(0.73)	(0.01)	(0.73)	(0.73)
Standardized Prediction Error	0.10	0.10[c]	0.11[c]	0.11[c]	0.10[c]
	(0.11)	(0.10)	(0.09)	(0.08)	(0.10)
Director Age	0.20	0.18		0.18	0.18
	(0.59)	(0.62)		(0.61)	(0.61)
Shareholder Lawsuits	-0.01		-0.02		
	(0.98)		(0.87)		
Shareholder Proposal	0.01		0.01	0.01	0.01
	(0.88)		(0.87)	(0.86)	(0.86)
Takeover Attempt	-0.07		-0.07	-0.07	-0.07
	(0.20)		(0.17)	(0.14)	(0.14)
Proxy Fight	-0.03		-0.04		
	(0.76)		(0.81)		
Restructuring	-0.02		-0.02		-0.02
	(0.80)		(0.77)		(0.81)
Seats					
Intercept	-1.30[d]	-1.30[d]	-1.30[d]	-1.30[d]	-1.30[d]
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Debt to Equity	1.88[e]	1.88[e]	1.88[e]	1.88[e]	1.88[e]
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Outside Directors	1.28	1.28	1.28	1.28	1.28
	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)
Grey Directors	0.95	0.94	0.95	0.95	0.94
	(0.31)	(0.32)	(0.31)	(0.31)	(0.31)
Blockholdings	0.01	0.01	0.01	0.01	0.01
	(0.57)	(0.56)	(0.56)	(0.56)	(0.56)

[a]P-values are in parentheses.
[b]Board turnover is the turnover in the three years following the poison pill adoption.
[c] Significant at ten percent. [d] Significant at five percent. [e] Significant at one percent.

divergent firms suggesting both the board and external forces act to counter managerial entrenchment.

External Labor Market

Testing for Differences in the Rates of Top Manager Re-employment[46]

If a top manager loses a current position, they must venture into the external labor market and bear the judgment of their previous actions. Table 28 suggests top managers are forced out more often from the divergent firms than from the convergent firms.[47] This evidence is consistent with board monitoring managerial behavior. Panel A reports the frequency of each reason provided in 94 cases of top manager turnover for which announcements could be found in the Wall Street Journal. Panel B provides my classification of top management turnover into voluntary and involuntary. Voluntary turnover occurs when there is no evidence a top manager left the firm due to pressure from the board of directors. Therefore, death is included in voluntary turnover, not because death is voluntary but because the top manager was not forced out by the board. Involuntary turnover includes early retirements, personal reasons, seeking new opportunities, or having differences with directors. I attempted to err in placing as many uncertain firms in the voluntary turnover group as possible. It would be entirely reasonable

[46]In order to increase sample size, the re-employment data was collected for top managers losing their position from three years before poison pill adoption to three years after. Managers losing a position only after a poison pill did not find job prospects significantly different from those shown in the table for the full sample.

[47] Tables 12 and 13 were repeated for top managers who were under age 64 and for top managers not involved in a takeover. The results were consistent with the full sample results.

Table 28
Reported Reason for Turnover

Principal reason reported in the Wall Street Journal for 94 incidents of management turnover in 247 New York and American Equity Exchange-listed firms that adopted poison pills. Management turnover is defined as the removal of a CEO from a top management positions.

Panel A: The reasons provided for management turnover in the Wall Street Journal

Reason for management turnover	Convergent turnover	Divergent turnover
Seeking New Opportunities[a]	2	6
Policy or personality differences with directors[b]	2	7
Personal Reasons	0	2
Death or illness	2	2
Normal management succession	3	1
Retirement	17	23
No Reason Given	8	18
Other	1	0
Total	35	59

Panel B: Classification of turnover into voluntary and involuntary departures

Reason for management turnover	Convergent turnover	Divergent turnover
Involuntary Turnover[c]	12	31
Voluntary Turnover[d]	21	26
Total	33	57
Chi-squared test of difference in probabilities	2.72[e]	

[a]Seeking new opportunities is assumed when the *Wall Street Journal* reports that a management change occurs because the manager is seeking new opportunities or wishes to serve in a senior position elsewhere.

[b]Differences with the directors is assumed when either the *Wall Street Journal* reports that a management change occurs because of differences between the directors and top manager or if any differences are rumored.

[c]Involuntary turnover is defined to include managers who are announced to be seeking new opportunities, having a difference with the directors, personal reasons, and early retirement.

[d]Voluntary turnover is defined to include managers who have retired after age 63, who are engaged in normal succession, no reason, or other. CEOs who have died are excluded.

[e]Difference is significant at ten percent.

to place no reason given or normal succession in the involuntary group. The resulting significant difference would not change, however, from the current results.

Panel A of Table 29 suggests divergent managers appear to be much more upbeat about their future prospects for work than convergent top managers. Nearly sixteen percent expect to be a senior manager in another company or self-employed after retirement compared to six percent for convergent top managers. In contrast, Table 29 panel B shows managers are rarely re-employed in a top management position one year after losing their job.[48] Only three managers from firms with value-increasing poison pills found a top managerial position after leaving their firm. However, only about one in five top managers from these firms appears to

have left the labor market. No top manager from firms with value-decreasing poison pills found top managerial positions in the year they left the firm, yet almost 40% of the top managers from these firms appear to have left the labor market.

In Table 29, three years after losing a job, fewer top managers remain in the labor market. Two of three the top managers from firms with value-increasing poison pills retain a top managerial position. A similar fraction remain in the managerial labor market. The rest of the managers appear to have left the labor market. No divergent manager has found a top manager position at a comparable firm even after three years. Under half of these top managers even remain in the labor market after three years. Although job prospects for all top managers are poor, top managers from firms with value-increasing poison pills appear more likely to find a new position after leaving their current firm.

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[48] I eliminating managers near mandatory retirement as including them would tend to exaggerate the lack of employment in both subsamples. I expect most managers leaving their firm at mandatory retirement age will be unable to find a comparable position with another firm.

Table 29
Top Manager Career after Turnover

Subsequent career profile of 90 CEOs who depart from firms which have adopted poison pills. The table excludes 4 CEOs who died.

Panel A: Intended future position reported in the Wall Street Journal

	Convergent Managers	Divergent Managers
Senior manager in another company	1	4
Honorary position in original company[a]	14	16
Self-Employed/Private Investor	1	5
Other	1	1
No Information/Retiring	16	31
Total	33	57

Panel B: Position/Occupation of top managers in each of the three years after they lose the position

Number of managers holding specified positions. The managers are split according to whether they fall into the convergent or divergent subsamples[b]

	Years after departure					
	1		2		3	
	Conv.	Div.	Conv.	Div.	Conv.	Div.
Senior manager in another company	3	0	3	0	2	0
Junior position in another company	1	1	1	1	2	2
Honorary position in original company[a]	18	26	14	22	12	17
Self-Employed/Private Investor	1	3	1	3	1	2
Holds outside directorships exclusively	5	7	6	7	7	7
No Information	7	22	10	26	11	31
Yearly Totals	33	57	33	57	33	57

Panel C: Do Former Top Managers Remain In the Labor Market?

	Years after departure					
	1		2		3	
	Conv.	Div.	Conv.	Div.	Conv.	Div.
Remain in Managerial Labor Market[c]	25	32	22	28	21	24
Leave Managerial Labor Market[d]	8	25	11	29	12	33
Yearly Totals	33	57	33	57	33	57
Chi-squared test for probability difference:	3.46[e]		2.61		3.88[f]	

[a]Honorary positions include consultant, and honorary chairman. In addition, this category includes managers who remain directors in their firms but hold no other title.

[b]Managers' occupations are determined from *Standard and Poor's Register of Corporations, Directors, and Executives* and the *Wall Street Journal*.

[c]Managers who stay with the company, work as a director, or find work in a large, publicly traded firm.

[d]Managers for whom there is no information, and managers who are listed as private investors.

[e]Difference is significant at ten percent. [f]Difference is significant at five percent.

Table 30
Top Manager and Director Seat Losses

Seat losses of top managers and directors of 247 publicly traded firms that instituted poison pill anti-takeover measures from 1984 to 1986. Variables are based on information contained in firms' annual proxy statements and 10K reports. Year 0 represents the year of the firm's poison pill adoption. Management and director seat loss is assumed to take place on the date of the first annual meeting after the seat loss occurs.[a]

Year 0 to +3	Top Managers and Directors	
Seat Changes[a]	Convergent	Divergent
Fraction Gained by CEO[e]	0.23	-0.08
Fraction Gained by Directors[b,g]	-0.14	-0.24
Fraction Gained by Inside Directors[d,g]	-0.01	-0.23
Fraction Gained by Grey Directors[b,g]	-0.11	-0.22
Fraction Gained by Outside Directors	-0.22	-0.26
Fraction Gained by Prof. Directors	-0.28	-0.30

[a]Convergent is the subsample which exhibited a positive stock price reaction upon the announcement of poison pill adoption. Divergent is the subsample which exhibited a negative stock price reaction upon announcement of poison pill adoption. Reported numbers are average seat changes across firms in the sample.

[b]Medians are significantly different at ten percent by the median test
[c]Medians are significantly different at five percent by the median test
[d]Medians are significantly different at one percent by the median test
[e]Means are significantly different at ten percent by the Mann-Whitney test
[f]Means are significantly different at five percent by the Mann-Whitney test
[g]Means are significantly different at one percent by the Mann-Whitney test

Univariate Tests of Changes in External Board Seats

Table 30 provides statistics on changes in the number of external board seats. In the four years following poison pill adoption, top managers in firms adopting value-reducing poison pills lose seats on other boards while managers adopting value-increasing poison pills gain other board seats. Seat loss is significantly greater for top managers whose firms adopt value-reducing poison pills than for top managers whose firms adopt value-increasing poison pills. The results suggest that external labor markets impose reputation penalties on managers who attempt to entrench themselves with poison pills.

Tests of differences in total director seat loss are significant. Seat loss is significantly greater at five percent for inside and grey directors of firms with value-reducing poison pills than for comparable directors in firms with value-increasing poison pills. Considering turnover of these directors did not differ across subsamples, it may be that top managers of divergent firms attempt to retain board members who allow the managers to diverge from the best interests of the shareholders. This would cause turnover of the retained board members to be lower than otherwise expected while the external labor market would identify such retained directors for their failure to protect shareholder interests and penalize them, on average, by removing them from other boards where they may be outside directors. This change of status to outside director is most likely for inside directors whose status is very specific to the individual firm. It is somewhat less likely for grey directors, some of whom are financial professionals or advisors and would be counted as grey for any board they sat on. Therefore although both inside directors and grey directors may be entrenched on the firm's board, grey director are less likely to lose many more seats than

inside directors. Consistent with this, the difference in the rate of seat changes is twice as high for inside directors as grey directors.

Parametric Tests of Top Manager Seat Losses

Regression 1 of Table 31 indicates top managers, on average, gain seats on other boards and seats gains are higher for top managers in convergent firms. Also, if a firm is involved in a takeover attempt or a shareholder lawsuit, top managers gain fewer seats on other boards. This suggests the number of seats lost depends not only on the boards expected behavior, but also on control events that occur ex-post. Regression 2 suggests without other control variables, the prediction error is more significant and still positive although the intercept loses signficance. The model, however, does lose most of its explanatory power. It appears from regressions 3, 4, and 5 that the prediction error coefficient is strongly determined by whether the takeover attempt variable is included. The takeover attempt coefficient remains significant and the shareholder lawsuit coefficient is marginally significant. Regression 5 also suggests the intercept is strongly influenced by whether the top manager age is included or excluded. The results in Table 31 suggest top managers gain seats on other boards more often if they are convergent directors. Seats are lost at a higher rate if the top manager's firm is the target of a takeover attempt or a shareholder lawsuit. The evidence is consistent with manager building a reputation by working in shareholder interests.

The results of the two-stage in Table 32 and the Table 33 three-stage regressions are somewhat mixed. The only significant and positive coefficient in table 32 is on the

Table 31
Ordinary Least Squares Regression on Top Manager Seat Changes

Explanation of changes in external board seats by top managers of 247 firms that adopted a poison pill amendment from 1984 to 1986. Results are from an ordinary least squares regression. Figures are based on information contained in firms' annual proxy statements.[a]

Equations	1	2	3	4	5
Intercept	5.16[c]	1.54	4.68	4.64	0.25[c]
	(0.08)	(0.13)	(0.11)	(0.11)	(0.01)
Standardized	0.12[c]	2.08[d]	0.13[d]	0.13[d]	0.13[d]
Prediction Error	(0.06)	(0.04)	(0.05)	(0.05)	(0.04)
CEO Age	-1.16		-1.08	-1.08	
	(0.11)		(0.13)	(0.13)	
Total	-0.04		-0.01		
Assets	(0.54)		(0.92)		
Shareholder			-0.37	-0.37[c]	
Lawsuits			(0.11)	(0.09)	
Shareholder	0.20				
Proposal	(0.28)				
Takeover	-0.44[d]		-0.43[d]	-0.43[c]	-0.55[c]
Attempt	(0.04)		(0.04)	(0.04)	(0.01)
Proxy	0.07				
Fight	(0.86)				
Restructuring	-0.07				-0.18
	(0.82)				(0.54)
F-statistic	2.46[d]	4.31[d]	3.68[c]	4.62[c]	4.34[c]
R-Squared	0.08	0.02	0.07	0.07	0.05

[a]P-values are in parentheses.

[b]Board seat changes is the number of seats the firms' directors lose or gain on external boards in the three years following the poison pill adoption. Board seat changes does not include seat changes of top managers. Top management seat changes is the change in the number of seats on external boards held by top managers in the three years following the poison pill adoption. Board and top management seat changes are assumed to take place on the date of the annual meeting following the actual seat changes.

[c]Significant at ten percent.

[d]Significant at five percent.

[e]Significant at five percent.

Table 32
Two-stage Regression on Top Manager Seat Changes

Explanation of changes in external board seats by top managers of 247 firms that adopted a poison pill amendment from 1984 to 1986. Results are from a two-stage least squares regression. Figures are based on information contained in firms' annual proxy statements.[a]

Equations	1	2	3	4	5
Intercept	6.75	6.92	0.17	5.92	0.21[e]
	(0.34)	(0.27)	(0.17)	(0.40)	(0.01)
Standardized Prediction Error	0.61[c]	0.52[d]	0.63[d]	0.62[d]	0.43[c]
	(0.06)	(0.05)	(0.05)	(0.05)	(0.08)
CEO Age	-1.62	-1.66		-1.40	
	(0.35)	(0.28)		(0.42)	
Shareholder Lawsuits	-0.12		-0.16	-0.11	-0.16
	(0.67)		(0.47)	(0.64)	(0.40)
Shareholder Proposal	0.13		0.11		
	(0.44)		(0.50)		
Takeover Attempt	-0.16		-0.13	-0.15[e]	-0.02
	(0.50)		(0.58)	(0.52)	(0.36)
Proxy Fight	0.11		0.08		
	(0.76)		(0.83)		
Restructuring	-0.01		-0.01		
	(0.98)		(0.96)		
F-statistic	1.21	1.26	2.64[d]	1.95[c]	2.39[e]
R-Squared	0.05	0.04	0.03	0.04	0.04

[a]P-values are in parentheses.

[b]Board seat changes is the number of seats the firms' directors lose or gain on external boards in the three years following the poison pill adoption. Board seat changes does not include seat changes of top managers. Top management seat changes is the change in the number of seats on external boards held by top managers in the three years following the poison pill adoption. Board and top management seat changes are assumed to take place on the date of the annual meeting following the actual seat changes.

[c]Significant at ten percent.

[d]Significant at five percent.

[e]Significant at five percent.

Table 33
Three-stage Regression on Top Manager Seat Changes

Explanation of changes in external board seats by top managers of 247 firms that adopted a poison pill from 1984 to 1986. Results are from a three-stage least squares regression.[a]

	1	2	3	4	5
Seat Changes					
Intercept	7.69	6.45	0.11	6.48	0.18[d]
	(0.14)	(0.20)	(0.25)	(0.20)	(0.02)
Standardized	0.10	-0.02	-0.47[d]	0.04	0.01
Prediction Error	(0.75)	(0.94)	(0.04)	(0.90)	(0.98)
CEO Age	-1.86	-1.56		-1.54	
	(0.15)	(0.20)		(0.22)	
Shareholder	-0.09		-0.28[c]		
Lawsuits	(0.62)		(0.10)		
Shareholder	0.15		0.05	-0.10	-0.16
Proposal	(0.22)		(0.66)	(0.54)	(0.32)
Takeover	-0.29[c]		-0.21	-0.28[c]	-0.26[c]
Attempt	(0.07)		(0.18)	(0.08)	(0.10)
Proxy	0.06		0.21		
Fight	(0.82)		(0.42)		
Restructuring	-0.06		-0.03		
	(0.78)		(0.90)		
Seats					
Intercept	-0.07	0.02	-0.02	0.04	0.04
	(0.92)	(0.98)	(0.98)	(0.96)	(0.96)
Firm Size	0.11	0.14	-0.01	-0.04	-0.04
	(0.25)	(0.14)	(0.55)	(0.59)	(0.61)
Outside Directors	-0.08	-0.14	-0.72	0.24	0.17
	(0.98)	(0.96)	(0.80)	(0.94)	(0.95)
Inside Directors	0.11	0.05	-0.25	0.05	0.02
	(0.91)	(0.96)	(0.78)	(0.96)	(0.99)
Blockholdings	-0.02	-0.01	-0.01	-0.02	-0.02
	(0.18)	(0.22)	(0.55)	(0.18)	(0.19)

[a]P-values are in parentheses.
[b]Top manager seat loss is the seat loss in the three years following the poison pill adoption.
[c] Significant at ten percent. [d] Significant at five percent. [e] Significant at one percent.

standardized prediction error. This suggests, as in the ordinary least squares regression, that a top manager in a convergent firm gains more seats on other boards than does a top manager in a divergent firm. Except in the absense of the age variable, the prediction error is not significant in Table 33. As in the ordinary least squares regression, shareholder lawsuits and takeover attempts are associated with seat losses on other boards. No coefficient on the seats regresssion is significant suggesting the third stage estimates may not be robust to alternate specifications.[49]

Parametric Tests of Total Director Seat Losses

Regression 1 of Table 34 shows directors gain board seats over time and gain more if they are directors of convergent firms. They lose seats, however, age they grow older or if the firm is a target of a takeover attempt. The gain over time and in firms suggests directors accumulate reputation in the managerial labor market over time but also gain reputation from the boards they sit on. In regression 2, the explanatory power is lower when other control variables are excluded, but the prediction error, intercept and age are all still significant. The absense of age in regresssion 3 changes no significant coefficients except the intercept and a marginal change in the significance of shareholder lawsuits. This effect suggests that the board age does not strongly effect the various control devices, but an older board is more likely to lose seats than a youger board. This appears to be due to directors approaching retirement and leaving the boards they sit on. Regression 4 suggests dropping control variables often associated with takeovers does not change the significance of any

[49] The control variables and age are generally robust to alternate third stage specifications, but the intercepts and prediction error coefficients are not.

Table 34
Ordinary Least Squares Regression on Total Director Seat Changes

Explanation of changes in external board seats by all directors of 247 firms that adopted a poison pill amendment from 1984 to 1986. Results are from an ordinary least squares regression. Figures are based on information contained in firms' annual proxy statements.[a]

Equations	1	2	3	4	5
Intercept	5.22[e]	5.18[e]	-0.13	4.89[e]	-0.13[e]
	(0.01)	(0.01)	(0.11)	(0.01)	(0.01)
Standardized	0.03[d]	0.03[d]	0.03[e]	0.03[d]	0.04[e]
Prediction Error	(0.04)	(0.03)	(0.01)	(0.03)	(0.01)
Director Age	-1.32[e]	-1.31[e]		-1.23[e]	
	(0.01)	(0.01)		(0.01)	
Shareholder	-0.05		-0.08	-0.06	-0.09[c]
Lawsuits	(0.33)		(0.13)	(0.20)	(0.07)
Shareholder	0.04		0.02		
Proposal	(0.27)		(0.53)		
Takeover	-0.13[e]		-0.12[e]	-0.14[e]	-0.13[e]
Attempt	(0.01)		(0.01)	(0.01)	(0.01)
Proxy	-0.01		-0.03		
Fight	(0.85)		(0.74)		
Restructuring	-0.08		-0.06		
	(0.19)		(0.34)		
R-Squared	0.15	0.09	0.09	0.07	0.09
F-statistic	6.14[e]	11.60[e]	4.11[e]	4.62[e]	7.68[e]

[a]P-values are in parentheses.

[b]Board seat changes is the number of seats the firms' directors lose or gain on external boards in the three years following the poison pill adoption. Board seat changes does not include seat changes of top managers. Top management seat changes is the change in the number of seats on external boards held by top managers in the three years following the poison pill adoption. Board and top management seat changes are assumed to take place on the date of the annual meeting following the actual seat changes.

[c]Significant at ten percent.

[d]Significant at five percent.

[e]Significant at five percent.

Table 35
Two-stage Regression on Total Director Seat Changes

Explanation of changes in external board seats by all directors of 247 firms that adopted a poison pill amendment from 1984 to 1986. Results are from a two-stage least squares regression. Figures are based on information contained in firms' annual proxy statements.[a]

Equations	1	2	3	4	5
Intercept	5.58[e]	9.70[e]	-0.14[e]	5.26[e]	-0.12
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Standardized	0.21[d]	0.30[c]	0.21[d]	0.22[d]	0.17
Prediction Error	(0.04)	(0.10)	(0.04)	(0.03)	(0.34)
Director Age	-1.41[e]	-2.40[e]		-1.32[e]	
	(0.01)	(0.01)		(0.01)	
Shareholder	-0.03		-0.07	-0.04	-0.08
Lawsuits	(0.62)		(0.30)	(0.49)	(0.17)
Shareholder	0.05		0.03		
Proposal	(0.34)		(0.57)		
Takeover	-0.10[c]		-0.10	-0.10[c]	-0.14[e]
Attempt	(0.10)		(0.12)	(0.09)	(0.01)
Proxy	-0.01		-0.03		
Fight	(0.90)		(0.77)		
Restructuring	-0.08		-0.06		
	(0.38)		(0.49)		
R-Squared	0.10	0.05	0.06	0.09	0.05
F-statistic	3.68[e]	6.52[e]	2.60[d]	5.83[e]	4.19[e]

[a]P-values are in parentheses.

[b]Board seat changes is the number of seats the firms' directors lose or gain on external boards in the three years following the poison pill adoption. Board seat changes does not include seat changes of top managers. Top management seat changes is the change in the number of seats on external boards held by top managers in the three years following the poison pill adoption. Board and top management seat changes are assumed to take place on the date of the annual meeting following the actual seat changes.

[c]Significant at ten percent.

[d]Significant at five percent.

[e]Significant at five percent.

Table 36
Three-stage Regression on Total Director Seat Changes

Explanation of changes in external board seats by all directors of 247 firms that adopted a poison pill from 1984 to 1986. Results are from a three-stage least squares regression.[a]

	1	2	3	4	5
Seat Changes					
Intercept	7.36[e]	6.74[e]	-0.13[e]	6.86[e]	-0.12[e]
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Standardized	0.48[e]	0.25	0.07	0.31[d]	0.27[c]
Prediction Error	(0.01)	(0.11)	(0.33)	(0.05)	(0.10)
Director Age	-1.84[e]	-1.69[e]		-1.71[e]	
	(0.01)	(0.01)		(0.01)	
Shareholder	0.02		-0.08[c]	-0.01	-0.05
Lawsuits	(0.72)		(0.09)	(0.85)	(0.31)
Shareholder	0.09[d]		0.01		
Proposal	(0.02)		(0.86)		
Takeover	-0.15[e]		-0.12[e]	-0.16[e]	-0.15[e]
Attempt	(0.01)		(0.01)	(0.01)	(0.01)
Proxy	-0.14		-0.01		
Fight	(0.12)		(0.86)		
Restructuring	-0.13		-0.07		
	(0.05)[d]		(0.30)		
Seats					
Intercept	-0.18	-0.24	0.15	0.13	0.16
	(0.69)	(0.68)	(0.82)	(0.82)	(0.78)
Firm Size	0.06	-0.08	-0.03	-0.07	-0.08
	(0.34)	(0.16)	(0.61)	(0.20)	(0.15)
Outside Directors	0.15	0.79	-0.09	0.98	1.00
	(0.93)	(0.70)	(0.97)	(0.61)	(0.63)
Inside Directors	-0.03	-0.12	-0.12	-0.10	0.03
	(0.96)	(0.85)	(0.87)	(0.87)	(0.97)
Blockholdings	0.01	-0.01	0.01	0.01	0.01
	(0.67)	(0.16)	(0.64)	(0.55)	(0.55)

[a]P-values are in parentheses.
[b]Board turnover is the turnover in the three years following the poison pill adoption.
[c]Significant at ten percent. [d]Significant at five percent. [e]Significant at one percent.

variables, but it does cut the explanatory power in half. In regression 5, removing director age leads to shareholder lawsuits having a negative impact on seat gains, consistent with the ordinary least squares results of the total board. The coefficient on the prediction error is also more significant when director age is not considered. Table 34 suggests the reputation from being a convergent director is reflected in the number of seats the director has gained. The number of seats can be reduced if the firms is a target of a takeover attempt, a shareholder lawsuit, or as the director grows older.

The results in Table 35 and Table 36 for the multi-stage regressions are generally consistent with the ordinary least squares results. The two-stage results in Table 35 have the same coefficients as the ordinary least squares regressions except that the shareholder lawsuit and prediction error coefficients are not significant in the regression 5. The F-statistics, however, tend to be lower. In Table 36, the three-stage regression results are again similar to those of the ordinary least squares results. The prediction error coefficients, as in regressions 2 and 5, are lower when age is not controlled. Restructuring variable suggests, at least when director age is controlled for, directors lose seats if they sit on the board of a firm that has restructured or will restructure.

In general, the results suggest directors serving on the board of a convergent firm are less likely to lose seats on other boards than are directors serving on the board of a divergent firm. Directors also tend to gain seats over time, but lose seats as they grow older. Also external control events for the firm are associated with the directors losing more seats on other boards.

Table 37
Ordinary Least Squares Regression on Inside Director Seat Changes

Explanation of changes in external board seats by inside directors of 247 firms that adopted a poison pill amendment from 1984 to 1986. Results are from an ordinary least squares regression. Figures are based on information contained in firms' annual proxy statements.[a]

Equations	1	2	3	4	5
Intercept	9.87[e]	10.06[e]	0.09	9.99[e]	0.07
	(0.01)	(0.01)	(0.14)	(0.01)	(0.23)
Standardized	0.10[e]	0.06[d]	0.11[e]	0.11[e]	0.38[d]
Prediction Error	(0.01)	(0.03)	(0.01)	(0.01)	(0.09)
Director Age	-2.40[e]	-2.49[e]		-2.40[e]	
	(0.01)	(0.01)		(0.01)	
Shareholder	-0.13		-0.19	-0.16	-0.19
Lawsuits	(0.31)		(0.16)	(0.19)	(0.18)
Shareholder	-0.01		-0.03		
Proposal	(0.97)		(0.72)		
Takeover	-0.14		-0.13	-0.16	-0.10
Attempt	(0.24)		(0.28)	(0.19)	(0.47)
Proxy	-0.24		-0.26		
Fight	(0.26)		(0.23)		
Restructuring	-0.02		0.01		
	(0.88)		(0.94)		
R-Squared	0.10	0.08	0.07	0.10	0.03
F-statistic	3.82[e]	7.98[e]	3.08[e]	6.39[e]	2.67[d]

[a]P-values are in parentheses.

[b]Board seat changes is the number of seats the firms' directors lose or gain on external boards in the three years following the poison pill adoption. Board seat changes does not include seat changes of top managers. Top management seat changes is the change in the number of seats on external boards held by top managers in the three years following the poison pill adoption. Board and top management seat changes are assumed to take place on the date of the annual meeting following the actual seat changes.

[c]Significant at ten percent.

[d]Significant at five percent.

[e]Significant at five percent.

Parametric Tests of Inside Director Seat Losses

The first regression in Table 37 has significant coefficients the same sign as the total board for the intercept, the prediction error and for director age. The coefficients on the other control variables are not significant suggesting inside directors are judged by the external labor market by their firm's performance rather than any control methods used by the external market. This is consistent with external control methods designed to pressure the board so that the board in turn will monitor the managers. The second regression without the control variables loses little explanatory. Eliminating the age variable in equation 3 also eliminates the significance of the intercept suggesting that the age influence is fairly constant over firms. Regressions 4 and 5 drop all control variables except the two with the lowest p-values, with and without an age variable. The regressions do not change the significant results, nor do their coefficients become more significant suggesting the results of the control variables are robust to alternate specifications.

The two-stage regression results in Table 38 are consistent with the ordinary least squares results although the prediction error coefficients tend to be larger. The explanatory power, however, is lower, as are the F-statistics for the regressions. The three-stage regression results in Table 39, provide the director age and the interecept are generally significant as shown in regression 1. Regression 2 suggest other control variables do not influence this significance, but when the age variable is dropped in regression 3 the prediction error, and shareholder lawsuits become signficant and the intercept loses significance. Again, no variable is significant suggesting the estimates may not be robust.

The results of testing inside director seat changes are very similar to those of the whole board. Except in the three-stage regression, convergent directors gain seats on other

Table 38
Two-stage Regression on Inside Director Seat Changes

Explanation of changes in external board seats by inside directors of 247 firms that adopted a poison pill amendment from 1984 to 1986. Results are from a two-stage least squares regression. Figures are based on information contained in firms' annual proxy statements.[a]

Equations	1	2	3	4	5
Intercept	11.07[e]	11.72[e]	0.08	11.22[e]	0.08
	(0.01)	(0.01)	(0.23)	(0.01)	(0.21)
Standardized	0.40[c]	0.50[d]	0.35	0.39[c]	0.04[d]
Prediction Error	(0.08)	(0.04)	(0.11)	(0.09)	(0.05)
Director Age	-2.70[e]	-2.87[e]		-2.74[e]	
	(0.01)	(0.01)		(0.01)	
Shareholder	-0.09		-0.15	-0.13	-0.09
Lawsuits	(0.53)		(0.28)	(0.36)	(0.52)
Shareholder	0.01		-0.02		
Proposal	(0.90)		(0.83)		
Takeover	-0.09		-0.09	-0.11	-0.11
Attempt	(0.52)		(0.52)	(0.43)	(0.46)
Proxy	-0.27		-0.30		
Fight	(0.27)		(0.19)		
Restructuring	-0.02		0.01		
	(0.92)		(0.94)		
R-Squared	0.07	0.05	0.04	0.06	0.05
F-statistic	2.51[d]	6.14[e]	1.67	4.08[e]	3.97[e]

[a]P-values are in parentheses.

[b]Board seat changes is the number of seats the firms' directors lose or gain on external boards in the three years following the poison pill adoption. Board seat changes does not include seat changes of top managers. Top management seat changes is the change in the number of seats on external boards held by top managers in the three years following the poison pill adoption. Board and top management seat changes are assumed to take place on the date of the annual meeting following the actual seat changes.

[c]Significant at ten percent.

[d]Significant at five percent.

[e]Significant at five percent.

Table 39
Three-stage Regression on Inside Director Seat Changes

Explanation of changes in external board seats by inside directors of 247 firms that adopted a poison pill from 1984 to 1986. Results are from a three-stage least squares regression.[a]

	1	2	3	4	5
Seat Changes					
Intercept	11.41[e]	12.07[e]	0.10	11.98[e]	0.08
	(0.01)	(0.01)	(0.17)	(0.01)	(0.16)
Standardized	0.17	0.16	-0.42[e]	0.24	0.18
Prediction Error	(0.66)	(0.68)	(0.03)	(0.54)	(0.65)
Director Age	-2.78[e]	-2.96[e]		-2.92[e]	
	(0.01)	(0.01)		(0.01)	
Shareholder	-0.08		-0.25[e]	-0.12	-0.19
Lawsuits	(0.55)		(0.07)	(0.35)	(0.13)
Shareholder	0.02		-0.07		
Proposal	(0.82)		(0.50)		
Takeover	-0.16		-0.11	-0.18	-0.16
Attempt	(0.19)		(0.35)	(0.14)	(0.18)
Proxy	-0.28		-0.15		
Fight	(0.22)		(0.50)		
Restructuring	-0.07		-0.01		
	(0.70)		(0.95)		
Seats					
Intercept	0.08	0.09	0.18	0.27	0.26
	(0.89)	(0.88)	(0.78)	(0.70)	(0.70)
Firm Size	0.10	0.09	-0.03	-0.06	-0.06
	(0.23)	(0.23)	(0.58)	(0.31)	(0.32)
Outside Directors	-0.62	-0.61	0.41	0.09	0.19
	(0.80)	(0.80)	(0.85)	(0.97)	(0.94)
Inside Directors	0.08	0.08	-0.20	-0.06	-0.05
	(0.92)	(0.92)	(0.78)	(0.94)	(0.95)
Blockholdings	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.49)	(0.48)	(0.64)	(0.59)	(0.58)

[a]P-values are in parentheses.
[b]Board seat changes is the seat changes in the three years following the poison pill adoption.
[c]Significant at ten percent. [d]Significant at five percent. [e]Significant at one percent.

boards over time but lose seat from age. It appears inside directors have a reputation in the external labor market beyond their work in the firm.

Regression one of Table 40 has a strongly positive intercept and a strong negative director age coefficient. All other control variables and the prediction error coeffiicents are not significant. The regression, itself is also not significant. In regression 2, all control variables are dropped but the remaining coefficients do not change. The regression become significant, but the explanantory power halves. In regression 3 when age is dropped, the intercept becomes negative and significant. This suggests that individuals tend to lose seats as they grow older, but the effect is a combination of age and time. Selective use of control variables in regressions 4 and 5 do not alter their lack of signficance nor do they alter the effect of dropping the age variable in regression 5, from that seen in regression 3. Also, no regression other than the second has a significant F-statistic.

In the first regression of Table 41, the prediction error coefficient suggest outside directors gain more seats when they serve on convergent firm's boards. Although nearly significant, age is not quite at a critical significance level. The other control variables, much like for the ordinary least squares regressions, are not significant. The next regression, even when not using the control variables, provides a similar coefficient for the prediction error and a significant F-statistic. Regression 3 shows the prediction error coefficient is invariate to the specification of age. The intercept changes sign and is nearly significant suggesting the same dual age and time effect on board seats as seen in the ordinary least squares regressions. In regressions 4 and 5, the variables with the lowest p-values are selected, but the coefficients are still invariate to specification. The regressions are also not significant.

Table 40
Ordinary Least Squares Regression on Outside Director Seat Changes

Explanation of changes in external board seats by outside directors of 247 firms that adopted a poison pill amendment from 1984 to 1986. Results are from an ordinary least squares regression. Figures are based on information contained in firms' annual proxy statements.[a]

Equations	1	2	3	4	5
Intercept	4.57[d]	4.56[d]	-0.20[e]	4.18[d]	-0.19[e]
	(0.03)	(0.02)	(0.01)	(0.04)	(0.01)
Standardized	-0.01	-0.01	0.01	0.01	0.01
Prediction Error	(0.89)	(0.86)	(0.90)	(0.90)	(0.91)
Director Age	-1.17[d]	-1.17[d]		-1.07[d]	
	(0.02)	(0.02)		(0.03)	
Shareholder	-0.08		-0.11	-0.09	-0.12
Lawsuits	(0.25)		(0.14)	(0.21)	(0.12)
Shareholder	0.04		0.03		
Proposal	(0.44)		(0.62)		
Takeover	0.01		-0.01	0.01	0.01
Attempt	(0.89)		(0.84)	(0.92)	(0.86)
Proxy	0.06		0.05		
Fight	(0.63)		(0.70)		
Restructuring	-0.08		-0.07		
	(0.40)		(0.52)		
R-Squared	0.04	0.02	0.01	0.03	0.01
F-statistic	1.28	2.81[c]	0.59	1.82	0.88

[a]P-values are in parentheses.

[b]Board seat changes is the number of seats the firms' directors lose or gain on external boards in the three years following the poison pill adoption. Board seat changes does not include seat changes of top managers. Top management seat changes is the change in the number of seats on external boards held by top managers in the three years following the poison pill adoption. Board and top management seat changes are assumed to take place on the date of the annual meeting following the actual seat changes.

[c]Significant at ten percent.

[d]Significant at five percent.

[e]Significant at five percent.

Table 41
Two-stage Regression on Outside Director Seat Changes

Explanation of changes in external board seats by outside directors of 247 firms that adopted a poison pill amendment from 1984 to 1986. Results are from a two-stage least squares regression. Figures are based on information contained in firms' annual proxy statements.[a]

Equations	1	2	3	4	5
Intercept	4.63	4.52	-0.20	4.24	-0.19[c]
	(0.13)	(0.12)	(0.11)	(0.15)	(0.01)
Standardized	0.35[d]	0.34[d]	0.33[d]	0.35[d]	0.32[d]
Prediction Error	(0.05)	(0.04)	(0.05)	(0.05)	(0.05)
Director Age	-1.19	-1.16		-1.09	
	(0.11)	(0.11)		(0.13)	
Shareholder	-0.08		-1.01	-0.08	-0.10
Lawsuits	(0.49)		(0.31)	(0.48)	(0.31)
Shareholder	0.04		0.03		
Proposal	(0.58)		(0.71)		
Takeover	0.06		0.06	0.06	0.06
Attempt	(0.58)		(0.55)	(0.57)	(0.55)
Proxy	0.09		0.08		
Fight	(0.62)		(0.67)		
Restructuring	-0.06		-0.05		
	(0.67)		(0.72)		
R-Squared	0.03	0.02	0.02	0.03	0.02
F-statistic	1.15	4.19[d]	0.95	1.84	1.76

[a]P-values are in parentheses.

[b]Board seat changes is the number of seats the firms' directors lose or gain on external boards in the three years following the poison pill adoption. Board seat changes does not include seat changes of top managers. Top management seat changes is the change in the number of seats on external boards held by top managers in the three years following the poison pill adoption. Board and top management seat changes are assumed to take place on the date of the annual meeting following the actual seat changes.

[c]Significant at ten percent.

[d]Significant at five percent.

[e]Significant at five percent.

Table 42
Three-stage Regression on Outside Director Seat Changes

Explanation of changes in external board seats by outside directors of 247 firms that adopted a poison pill from 1984 to 1986. Results are from a three-stage least squares regression.[a]

	1	2	3	4	5
Seat Changes					
Intercept	6.95[e]	4.56[d]	-0.20[e]	7.19[e]	-0.18[e]
	(0.01)	(0.03)	(0.01)	(0.01)	(0.01)
Standardized	0.82[e]	0.01	0.77[e]	0.52[d]	0.48[c]
Prediction Error	(0.01)	(0.99)	(0.01)	(0.04)	(0.07)
Director Age	-1.76[e]	-1.16[d]		-1.81[e]	
	(0.01)	(0.02)		(0.01)	
Shareholder	-0.01		-0.06	-0.01	-0.05
Lawsuits	(0.88)		(0.48)	(0.92)	(0.52)
Shareholder	0.13[d]		0.11[c]		
Proposal	(0.03)		(0.07)		
Takeover	-0.01		0.01	-0.03	-0.02
Attempt	(0.97)		(0.89)	(0.63)	(0.73)
Proxy	-0.19		-0.22		
Fight	(0.17)		(0.11)		
Restructuring	-0.18[c]		-0.15		
	(0.10)		(0.14)		
Seats					
Intercept	-0.09	0.26	-0.09	0.24	0.26
	(0.84)	(0.71)	(0.84)	(0.65)	(0.63)
Firm Size	0.12[c]	-0.06	0.13[d]	-0.08[c]	-0.09[c]
	(0.06)	(0.33)	(0.03)	(0.10)	(0.08)
Outside Directors	-0.53	0.27	-0.56[c]	0.30	0.36
	(0.77)	(0.91)	(0.76)	(0.87)	(0.85)
Inside Directors	0.31	-0.06	0.41	0.21	0.31
	(0.59)	(0.94)	(0.48)	(0.71)	(0.61)
Blockholdings	0.01	-0.01	0.01	0.01	0.01
	(0.24)	(0.59)	(0.34)	(0.79)	(0.82)

[a]P-values are in parentheses.
[b]Board seat changes is the seat changes in the three years following the poison pill adoption.
[c]Significant at ten percent. [d]Significant at five percent. [e]Significant at one percent.

Regression 5 also shows dropping the age affects the intercepts significantly when some of the control variables are removed from the regression. The results in Table 42 are consistent with those in Table 41, except now the director age and the intercept are everywhere significant. The regression on seats shows firm size to be a predictor of the number of seats held on the board by outside directors suggesting larger firms are in some sense central to the labor market.

Outside directors appear to exhibit the same tradeoff between age and time that the other directors do. It appears, together the two effect are negative, and they dominate the regressions leaving the prediction error to be not significant. In the multi-stage regressions, the prediction error is significant and positive suggesting outside directors gain more seats when they sit on the board of convergent firms.

Parametric Tests of Grey Director Seat Losses

Regression 1 of Table 43 shows grey directors gain board seats over time and gain more if they are directors of convergent firms. They lose seats, however, age they grow older or if the firm is a target of a takeover attempt. The gain over time and in firms suggests grey directors accumulate reputation in the managerial labor market over time but also gain reputation from the boards they sit on. In regression 2, the explanatory power is lower when other control variables are excluded, but the prediction error, intercept and age are all still significant. The absense of age in regresssion 3 changes no significant coefficients except the intercept and a marginal change in the significance of shareholder lawsuits. This effect suggests that the board age does not strongly effect the various control devices, but an older board is more likely to lose seats than a younger board. This appears

Table 43
Least Squares Regression on Grey Director Seat Changes

Explanation of changes in external board seats by grey directors of 247 firms that adopted a poison pill amendment from 1984 to 1986. Results are from an ordinary least squares regression. Figures are based on information contained in firms' annual proxy statements.[a]

	1	2	3	4	5
Intercept	9.31[e]	9.06[e]	-0.03	8.79[e]	-0.03
	(0.01)	(0.01)	(0.55)	(0.01)	(0.53)
Standardized	0.06	0.06[d]	0.07[d]	0.06[d]	0.07[d]
Prediction Error	(0.03)	(0.03)	(0.02)	(0.03)	(0.02)
Director Age	-2.29[e]	-2.25[e]		-2.16[e]	
	(0.01)	(0.01)		(0.01)	
Shareholder	-0.04		-0.09	-0.05	-0.10
Lawsuits	(0.67)		(0.37)	(0.61)	(0.33)
Shareholder	0.05		0.02		
Proposal	(0.53)		(0.80)		
Takeover	-0.24[e]		-0.23[d]	-0.25[e]	-0.24[d]
Attempt	(0.01)		(0.02)	(0.01)	(0.02)
Proxy	0.09		0.07		
Fight	(0.59)		(0.68)		
Restructuring	-0.13		-0.09		
	(0.35)		(0.51)		
R-Squared	0.11	0.07	0.06	0.10	0.06
F-statistic	4.06[e]	8.73[e]	2.74[d]	6.71[e]	5.30[e]

[a]P-values are in parentheses.

[b]Board seat changes is the number of seats the firms' directors lose or gain on external boards in the three years following the poison pill adoption. Board seat changes does not include seat changes of top managers. Top management seat changes is the change in the number of seats on external boards held by top managers in the three years following the poison pill adoption. Board and top management seat changes are assumed to take place on the date of the annual meeting following the actual seat changes.

[c]Significant at ten percent.

[d]Significant at five percent.

[e]Significant at five percent.

to be due to grey directors approaching retirement and leaving the boards they sit on. Regression 4 suggests dropping control variables often associated with takeovers does not change the significance of any variables nor greatly change the explanatory power of the regression. In regression 5, removing director age leads to a large drop in explanatory power without any increase of significance for the other variables. The coefficient on the prediction error is also more

significant when director age is not considered. Table 43 suggests the reputation from being a convergent director is reflected in the number of seats the director has gained. The number of seats can be reduced if the firms is a target of a takeover attempt, or as the director grows older.

The results in Table 44 and Table 45 for the multi-stage regressions are generally consistent with the ordinary least squares results although the prediction error is not significant in the two-stage regressions and not always significant in the three-stage regressions. Otherwise the two-stage results in Table 44 have similar coefficients to the ordinary least squares estimates. The F-statistics and R-squareds, however, tend to be lower. In Table 45, the three-stage regression results are again similar to those of the ordinary least squares results. The prediction error coefficients, as in regressions 2, 4, and 5, are lower when shareholder proposals and restructuring are not controlled. However, the age variables are significant and negative across all regressions as are the takeover coefficients. These suggest grey directors lose more board seats as they age or if they are on a firm's board that serves as a takeover target.

Grey directors appear to have the same level of significance of the intercept, age, and

Table 44
Two-stage Regression on Grey Director Seat Changes

Explanation of changes in external board seats by grey directors of 247 firms that adopted a poison pill amendment from 1984 to 1986. Results are from a two-stage least squares regression. Figures are based on information contained in firms' annual proxy statements.[a]

	1	2	3	4	5
Intercept	10.01[e]	9.70[e]	-0.04	9.48[e]	-0.03
	(0.01)	(0.01)	(0.49)	(0.01)	(0.48)
Standardized	0.13	0.21	0.16	0.13	0.17
Prediction Error	(0.43)	(0.53)	(0.33)	(0.42)	(0.31)
Director Age	-2.47[e]	-2.40[e]		-2.33[e]	
	(0.01)	(0.01)		(0.01)	
Shareholder	-0.02		-0.08	-0.03	-0.08
Lawsuits	(0.83)		(0.48)	(0.75)	(0.42)
Shareholder	0.06		0.03		
Proposal	(0.46)		(0.74)		
Takeover	-0.23[d]		-0.21[d]	-0.23[e]	-0.22[d]
Attempt	(0.02)		(0.04)	(0.01)	(0.03)
Proxy	0.06		0.04		
Fight	(0.71)		(0.83)		
Restructuring	-0.13		-0.10		
	(0.34)		(0.50)		
R-Squared	0.09	0.05	0.04	0.08	0.04
F-statistic	3.41[e]	5.97[e]	1.80[c]	5.53[e]	3.40[d]

[a]P-values are in parentheses.

[b]Board seat changes is the number of seats the firms' directors lose or gain on external boards in the three years following the poison pill adoption. Board seat changes does not include seat changes of top managers. Top management seat changes is the change in the number of seats on external boards held by top managers in the three years following the poison pill adoption. Board and top management seat changes are assumed to take place on the date of the annual meeting following the actual seat changes.

[c]Significant at ten percent.

[d]Significant at five percent.

[e]Significant at five percent.

Table 45
Three-stage Regression on Grey Director Seat Changes

Explanation of changes in external board seats by grey directors of 247 firms that adopted a poison pill from 1984 to 1986. Results are from a three-stage least squares regression.[a]

	1	2	3	4	5
Seat Changes					
Intercept	13.49[e]	11.04[e]	-0.04	11.47[e]	-0.02
	(0.01)	(0.01)	(0.46)	(0.01)	(0.63)
Standardized	0.81[e]	0.30	0.32[d]	0.40	0.34
Prediction Error	(0.01)	(0.35)	(0.04)	(0.22)	(0.30)
Director Age	-3.32[e]	-2.73[e]		-2.82[e]	
	(0.01)	(0.01)		(0.01)	
Shareholder	0.08		-0.03	0.02	-0.05
Lawsuits	(0.43)		(0.79)	(0.85)	(0.62)
Shareholder	0.12		0.06		
Proposal	(0.14)		(0.48)		
Takeover	-0.30[e]		-0.25[e]	-0.28[e]	-0.27[e]
Attempt	(0.01)		(0.01)	(0.01)	(0.01)
Proxy	-0.08		-0.07		
Fight	(0.69)		(0.68)		
Restructuring	-0.20		-0.09		
	(0.15)		(0.53)		
Seats					
Intercept	-0.50	0.03	0.11	-0.09	-0.02
	(0.31)	(0.97)	(0.87)	(0.89)	(0.97)
Firm Size	0.08	-0.07	-0.07	-0.07	-0.08
	(0.23)	(0.25)	(0.21)	(0.25)	(0.22)
Outside Directors	1.38[c]	1.43	1.17	1.86	1.64
	(0.09)	(0.53)	(0.62)	(0.40)	(0.47)
Inside Directors	0.47	0.16	0.14	0.23	0.25
	(0.47)	(0.83)	(0.85)	(0.75)	(0.73)
Blockholdings	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.74)	(0.42)	(0.46)	(0.37)	(0.41)

[a]P-values are in parentheses.
[b]Board seat changes is the seat changes in the three years following the poison pill adoption.
[c]Significant at ten percent level. [d]Significant at five percent level. [e]Significant at one percent level.

prediction error as that of other groups of directors. In general, the results suggest grey directors serving on the board of a convergent firm are less likely to lose seats on other boards than are directors serving on the board of a divergent firm. Directors also tend to gain seats over time, but lose seats as they grow older. Unlike other non-executive directors, grey directors lose more seats when they are on a boards serving as a target of a takeover. If grey directors serve on the board for their expertise, if a firm performs poorly, the value of that director's expertise may be called into question and therefore the value of the director decreases. At the same time, poorly performing firms attract takeovers. Alternately a grey director may merely be stigmatized by being associated with a firm that appears to be a good takeover candidate.[50] However, any such stigma should also attach to outside directors of the firm. No evidence of this is found among outside directors.

[50] The fact that the grey director served on a board which decided to sell the firm provides a signal to the expected future behavior of the grey director.

CHAPTER VII

CONCLUSION

Predicting Top Management Changes

I document the turnover of managers and directors of a sample of nationally listed United States firms that adopted poison pills in 1985 and 1986. Following poison pill enactment, the turnover rate for top managers who adopted value-decreasing poison pills is above 12% per year, while the rate of turnover for top managers who adopted value-increasing poison pills is only 7.61% per year. Consistent with the predictions of the internal labor market effectiveness hypothesis, management turnover is inversely related to the market's response to poison pill adoption announcements.

The results using ordinary least squares, two-stage least squares and three-stage least squares provide further support for turnover being greater in firms adopting value-reducing poison pills. Both the poison pill reaction and important control events for the firm explain turnover after a firm adopts a poison pill. A more negative reaction, or a greater number of control events are associated with higher turnover among directors and managers of the firm. The one exception is shareholder proposals which are associated with less top manager turnover. This may be because the proposal indicates that outside monitors have all but given up forcing the top manager to leave or it may indicate that the outside shareholders are placing pressure on the top manager and are successful in having that top manager change so that they do not need to force out the top manager in favor of an unproven alternate.

Explaining Changes in Other Board Seats

Loss of seats from other boards increases when the board adopts a value-reducing poison pill. It appears the loss of seats may be one of external labor market's responses to managerial entrenchment. The poison pill prevents direct influence by external labor on top managerial turnover, and the top managers have enough influence with the board to obviate indirect influence by placing pressure on the board of directors. The remaining choice available to the external labor market is the removal of the directors and top managers from seats on other boards.

While the evidence suggests the labor markets tend to eliminate top managers who do not maximize firm value, not all top managers are subject to equal discipline. Certainly the results are consistent with the view that labor markets discipline top managers and directors. However, the costs incurred by the firm before eliminating top managers and directors are still uncertain.

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APPENDIX A

Although less complicated than compensation of senior executives, directors often receive a wide diversity of benefits for serving on the board of directors. In most firms employee directors do not gain direct pecuniary benefit from serving on the board of directors. Other directors receive compensation and benefits. Compensation is usually based on both service on the fill board and on the board's committees. The usual committees are Audit, Nomination, Compensation, and Executive with others such as Pension, Public Policy, Investments, or Finance occuring less frequently.

Director compensation usually consists of four elements. The first is a flat fee paid each month, quarter, or year. The flat fee usually includes separate fees for service on the full board and for service on each board committee. Although the committee flat fee is usually the same across committees, sometimes important committees like the Audit Committee or the Executive Committee entitle committee members to a much higher fee. In particular Executive Committee members are often paid a fee over triple the fee for a regular committee. A *per diem* of $200 to $1000 are paid for each board of directors or board committee meeting. The commitee meeting *per diem* are often the same as the board *per diem* fees, but sometimes they are lower. Some firms pay committee *per diem* only on days when the full board does not meet. Others pay two *per diem* fees in such cases. Additionally, many firms pay a fee to committee chairs and some also pay a higher *per diem* rate for the chairs. Finally, firms usually provide directors the ability to defer compensation until after retirement age or when they leave the board. The deferred compensation usually increases as some rate about the Treasury bill rate per year to protect the time value of the

money. Some plans increase the value by the price increase of the company's shares for the year, adjusted for dividends. The plans are usually unfunded but this is not necessary.

In addition many firms provide their directors with other forms of compensation. A retirement plan is often provided to directors provided they have served at least five years on the board and are of retirement age. Starting at five years of service, benefits are vested yearly until full vestiture at ten years of service. Companies also often provide directors shares of stock or stock options. These are often periodic grants. The periodicity of the grants will tend to cause either understatement of the value, or overstatement. The bias depends on whether the options are granted during the year under consideration. In most firms, particularly after 1987, directors are indemnified for their board decisions. Some firms also provide insurance (Health, Life, Accidental Death and Dismemberment) to directors. Many firms also compensate directors for their expenses, above and beyond the per meeting fee. Different firms also provide other benefits to their directors. American Airline subsidizes director flights. Other companies provide use of company cars or other benefits. For most of the benefits, there is no good valuation method. I provide the assumptions and methods that I used below.

Assume the average director has served the whole year and therefore will receive the complete flat fee for both the board and their committee meetings. For per meeting fees, it is necessary to multiply the board per meeting fee by the number of board meetings. Likewise, multiply the committee per meeting fee by the average number of committee meetings attended by outside or grey directors during the year. Unless the firm otherwise specifies, I assume the committee meetings occur on the same day as a board meeting (An Executive meeting often does not occur during board meetings). Some firms will pay for

only one meeting a day or will pay less if a committee meeting occurs on the same day as a board meeting. If so, I take the difference between the board meetings for the year less the average number of committee meetings for outside/grey directors. If positive, all meetings are assumed to take place the same day as the board meeting. If negative, the negative portion is assumed to take place on a different day than the board meeting. I also inspect the frequency of a committee's meeting. If a committee meets more often than the board, I assume the excess meetings do not occuring during a board meeting.

As previously mentioned, a committee chair can receive a flat fee, a per committee meeting fee or both. For per meeting fees, compensation is the per meeting fee times the number of meetings of the committee. The average is taken by dividing the total fee to the chairs of the committee by the number of outside/grey directors. Note that some firms pay members to just sit on a committee (Usually the Executive Committee). These payments are valued the same as payments to committee chairs.

Most large companies allow individuals deferral options. These are generally unfunded and permit deferred compensation to grow at either a T-bill rate or some firm-specific rate such as the rate of return on the stock or the company's cost of capital. The primary benefit is not growth, however, but deferral. Deferral is difficult to value due to uncertain tax rates. Assume the top marginal rate as the director's average tax rate, and the next highest rate as their expected future tax rate. Subtract the average age of outside/grey directors from mandatory retirement(usually age 70 or 72 for directors) or from an age specified in the deferral plan as the payout age. This number is the number of periods over which taxation is put off (on average). If you assume the directors' discount rate is just the

rate the company provides as a rate of return on the deferred compensation, the deferment benefits is just the difference in the two tax rates multiplied by total compensation.

A retirement plan typically kicks in if a director has served for a certain minimum number of years (5-10) or has reached the mandatory retirement age of the board (usually age 70 or 72). The plans usually do not fully vest until ten years of sevice, but vesting usually begins after five years and increases incrementally til ten years is reached. The most common form is to provide the flat fee being paid to directors at retirement age for either the number of years the person has served on the board, often to a upper limit of ten years, or for life. Most plans also pay out to widows or survivors in case of the director's death during the payment period. This payment can be either a continuation of the current benefits stream or a lump sum payment. As the payments usually continue on after death, I ignore the probability of death and assume payments will occur for ten years. Some plans require consulting by the former directors in order to receive this payment.

Assuming director's compensation is expected to grow at their discount rate (for both their discount rate and their expected rate of compensation growth are unknown), the value of the retainer at retirement is just equal to the value of the current flat fee. Find the future value of the retirement payments valued at the retirement year. Some plans allow the retainer to grow--multiply the current retainer by the number of years the plan will pay retirement benefits(assume 10 years if it pays for life). If the retainer is fixed over the period of retirement, find the future value with a 10% discount rate.

If the average board tenure of outside and grey directors is over the required number of years to obtain retirement or over the maximum years of service which would allow full benefits, find the average difference between the plan's retirement age and the

average age on the board. If board age is the same or higher, directors gain no incremental benefits. If the retirement age is higher, divide the difference by the average tenure--this provides a fraction of vesting for the coming year. Multiply this vesting fraction by the present value of the retirement benefits. Multiply this by (1-turnover rate of outside and grey directors) as not everyone survives another year.

If the average outside and grey board tenure is less than the minimum number of years to start being vested, again assuming discount rate = long-term rate of pay increase, multiply

$$(\text{1-turnover rate})^{(\#\text{years before start vesting-1})} \text{ x}\left(\sum_{i=1}^{n} \text{retainer}\,(1-\text{turnover rate})^{i}\right) \text{ where}$$

n=the number of years from when vesting starts until the director is fully vested. Take the above number and divide by the number of years until the director is fully vested to find the expected marginal vesting from an added year of service.

If the average tenure is between minimum and maximum vesting age, use $\sum_{i=1}^{n} \text{retainer}\,(1-\text{turnover rate})^{i}$ to determine the expected value of the remaining benefits. The marginal vesting benefit is retainer(1-turnover rate).

I use the standard BOPM pricing model for options. I use the share price of the first trading day after the annual meeting for share and option valuation. The only problem here is boards may be more willing to be paid in options or stock if they have information that the market does not have about the firm's future prospects and are optimistic. The share price or BOPM may therefore undervalue the options or stock granted to directors,

Firms that pay insurance often list aggregate payment. Divide the aggregate payments by the number of directors receiving insurance coverage to find the average. If the

aggregate is not listed, I assume $250 per insurance plan provided per year. This number is close to various numbers provided in the few proxy statements that valued insurance.

Some firms pay expenses of all directors, others pay only for out of town directors. Unless otherwise specified, I assume average expenses for outside/grey directors to be $400 per board of directors meeting. This number is the one most frequently used by the firms who provide a value estimate. The next most common number is $250. I also assume $400 per committee meeting not taking place on the same day as a board meeting (see above). If this is paid to only out of town directors, the total expenses are added up and divided by the number of outside/grey directors. (This may not be compensation per se, but it appears many firms have directors pay such costs. If the firms pay expenses, it saves directors money, and the directors may have increased enjoyment as they substitute to higher value expenses).

As previously mentioned, some firms provide benefits such as reduced (or free) plane fares, use of company car or other benefits. If the firm does not value these, I use $5000 per year for each outside/grey director so served. This is the number most frequently used by the firms that do report the estimated costs. It may be downward biased if firms with higher costs select out of reporting such benefits. If not all directors receive these benefits, I average the benefits from those who do across all outside/grey directors.

VITA

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