BOARD INDEPENDENCE AND CORPORATE GOVERNANCE:

EVIDENCE FROM DIRECTOR RESIGNATIONS

A Dissertation

by

MANU GUPTA

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

May 2005

Major Subject: Finance

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ABSTRACT

Board Independence and Corporate Governance: Evidence from

Director Resignations. (May 2005)

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As evident from recent changes in NYSE and Nasdaq listing requirements, board independence is considered an important constituent of firms' corporate governance structures. However, the empirical evidence regarding the impact of board structure on firm performance is mixed. Since firms employ a variety of governance mechanism to control agency problems, the significance of board independence may depend upon the strengths of other governance mechanisms.

I study the importance of board independence from the viewpoint of an investor by examining the market reaction to board member resignation announcements. I then examine this market reaction in the context of each firm's existing governance structure and business environment. I find that investors react more negatively when an outside director resigns from the board than when an inside or gray director resigns. More importantly, I find that investor reaction to outside director resignation is less negative when insider or non-affiliated blockholder stock ownership is high. This evidence suggests that board independence and insider ownership and non-affiliated blockholder

ownership may serve as substitutes. Furthermore, the evidence indicates that firms may require higher board oversight when a large part of managerial compensation is based on stock incentives. This finding suggests that overly high levels of stock-based managerial compensation may exacerbate agency problems. Taken together, these results have important implications for choosing an effective set of governance mechanisms that may work independently or in combination with each other to mitigate the agency cost of equity.

Dedicated to my wife Shivani, father Ram Prakash, and mother Kalpana.

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CHAPTER I

INTRODUCTION

On August 16, 2002, the New York Stock Exchange filed proposed changes in listing requirements with the Securities Exchange Commission (SEC) that are aimed at ensuring board independence and improving corporate governance practices. The NYSE requires that "the board of directors of each listed company to consist of a majority of independent directors".[1] Exceptions to this rule are available to closely held firms implying that high managerial ownership may substitute for board independence in improving corporate governance. Shortly after the NYSE adopted its new requirements, Nasdaq proposed similar changes to their listing requirements. The SEC accepted the proposal, and the listing requirements were changed on November 4, 2003.

Institutional investors like the California Public Employee's Retirement System (CalPERS) and their associations such as the Council of Institutional Investors (CII) started making similar guidelines for board independence five years before they were adopted by the major stock exchanges. However, as recognized by CalPERS, the effectiveness of an independent board may depend upon the existing governance structure and the business environment in which the firm operates: "CalPERS recognizes that some of these (guidelines) may not be appropriate for every company, due to

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This thesis follows the style of the Journal of Financial Economics.
[1] Page 4. 'NASD and NYSE Rulemaking: Relating to Corporate Governance', available at http://www.sec.gov/rules/sro/34-48745.htm

differing development stages, ownership structure, competitive environment, or a myriad of other distinctions"[2].

Other countries have also started paying attention to board independence as a means of improving corporate governance. In 1990, the United Kingdom government appointed the Cadbury Committee to make recommendations on improving corporate governance. *The Code of Best Practice*, issued by the Cadbury Committee included a recommendation for having at least 3 non-executive directors on the board. The 1994 Dey report submitted to the Ontario Exchange Commission led to changes in governance-related disclosure requirements for firms listed on the Toronto Stock Exchange (TSE). Firms listed on TSE are now required to disclose the association of each board member with the management and the firm. They are also required to disclose whether or not a majority of their directors are unrelated to the firm.

Agency problems arise when the owners (shareholders) give control to agents (managers). The agents may focus on their own interests and thus deviate from shareholder value maximization. This deviation between the goals of managers and shareholders may lead to losses in firm value. Several corporate governance mechanisms have been suggested to reduce these agency problems. Some of these mechanisms are external to the firm, like external capital markets, the managerial labor market, etc., while others are internal to the firm, such as monitoring by the board of

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[2] Page 3, 'Corporate Governance Core Principles and Guidelines' CalPERS (1998), available at http://www.calpers-governance.org/principles/domestic/US/page01.asp

directors, separation of the CEO and Chairman positions, and levels of debt in the capital structure.

A number of empirical studies have examined the effects of board structure in controlling agency problems, mixed results. Some of the studies examine the influence of a particular governance mechanism on a firm's decisions. For example, Weisbach (1988) finds that an outsider-dominated board is more likely to fire the top manager in case of bad performance. Also, Brickley, Coles, and Terry (1994) present evidence supporting the hypothesis that outside directors vote in the interests of the shareholders when considering adoptions of poison pills. Byrd and Hickman (1992) find that, in the case of tender offers, announcement period abnormal returns are much higher when outsiders dominate the board. Additionally, Rosenstein and Wyatt (1990) examine the effect of an event that alters a particular governance mechanism, and find a positive market reaction to the addition of outsiders to the board. Gupta and Lee (2004) report that firms with better governance pay smaller premiums for director and officer liability insurance. The general conclusion of these studies is that an outsider-dominated board helps reduce agency problems. However, Bhagat and Black (2001) use a simultaneous equations framework and find that there is no significant relation between board independence and firm performance. Agrawal and Knoeber (1996) find a negative effect of the number of outsiders on the board on Tobin's Q.

Newly developed guidelines and listing requirements suggest that regulators and influential institutions like CalPERS consider board independence an important aspect of corporate governance. These institutions and regulators, and their guidelines and

requirements, influence the investment decisions of a majority of investors. Yet, there is no consensus in the financial economics literature to suggest that board independence is a necessary and/or sufficient condition for improving firm governance. It is possible that other governance mechanisms may effectively substitute for board independence. Clearly, large and influential entities such as the SEC imply that board independence is desirable. Therefore, it is crucial that there be more and better evidence regarding the importance of board independence, and more specifically board independence as it relates to other governance mechanisms in providing effective corporate governance.

Studies like Rosenstein and Wyatt (1990), and Rosenstein and Wyatt (1997) examine investor response to director appointments. While these studies appear to establish that director appointments are deemed to be important events to investors (a good first step), they do not investigate the effect of firms' governance characteristics and business environment on investor reaction. Although Agrawal and Knoeber (1996) do examine multiple governance mechanisms, they do so in a static framework where the effects of the mechanisms on firm performance are assessed simultaneously. Also, Agrawal and Knoeber use Tobin's Q as a measure of performance. Tobin's Q is not a clean measure of performance as it is also a proxy for risk and for growth opportunities.

I examine the importance of board independence as perceived by investors conditional upon the existing governance structure and the firm's business environment. This approach allows me to analyze whether or not shareholders consider board independence to be an important facet of firm governance, and under what conditions board independence may be desirable. Specifically, I measure the market reaction to

abrupt changes in board structure that occur due the director resignations. I then classify the outgoing director as insider, gray, or outsider depending on his/her affiliation with the firm. The governance mechanisms that can potentially substitute for board independence are then identified by regressing the market reaction to director resignation on other mechanisms. Investors will presumably be less concerned over a loss in board independence when the firm has other potentially effective governance mechanisms in place.

Employing a sample of 299 director resignation announcements during years 1990 – 2000, I find that firms with outside director resignations suffer an average 1.74% loss in market value over a three-day period surrounding the announcement. Market returns from insider resignations is -1.17%, and gray director resignations result in insignificant abnormal returns during the same period. This evidence suggests that investors are concerned over changes in board structure. Using OLS regressions, I find that investors react more negatively to outside director resignations when the strength of other mechanism, as captured by a corporate governance index, is low. When individual mechanisms are considered, officer and director ownership and non-affiliated block ownership are found to be possible substitutes for board independence. The market reaction to a loss in board independence is more negative for firms with higher incentive compensation of their CEOs.

The evidence presented in this study suggests that investors consider board independence an important aspect of firm's governance. Nevertheless, board independence is not the only mechanism that is employed to reduce agency problems.

Other mechanisms like insider ownership, non-affiliated blockownership, top managers' compensation, etc., may also work to mitigate agency problems. These mechanisms may work independently or in combination with each other. The results of my study suggest that to some extent a loss of board independence may be compensated for by employing other mechanisms like insider ownership and non-affiliated blockownership. Incentive compensation, though providing alignment of incentives between CEOs and shareholders, may itself increase agency problems if the high levels of stock-based compensation induce managers to commit accounting fraud. In that case an independent board may be needed to provide important oversight.

These results provide important implications for current changes in the regulatory environment. The NYSE and Nasdaq recently changed their listing requirements. Listed firms are now required to have a majority of independent directors. Exceptions to this rule are available to closely held firms suggesting that high managerial ownership may be viewed as a substitute for board independence in improving corporate governance. My results are in agreement with the notion of substitution between board independence and high insider ownership. Furthermore, this study identifies non-affiliated block ownership as another governance mechanism that may help resolve agency problems in the absence of an independent board. The regulatory agencies may thus consider providing more exceptions to the requirement of board independence.

Chapter II reviews literature related to corporate governance and board independence. The hypotheses, data, and methodology are described in Chapter III.

Empirical results are discussed in Chapter IV. The conclusions of this study are
presented in Chapter V.

CHAPTER II

LITERATURE REVIEW

2.1 Theory

This study is based on the concept of the agency problem of equity and the role of corporate boards of directors in controlling this problem. In this section I provide an overview of agency theory and of the corporate governance literature.

2.1.1 The Agency Problem

Shleifer and Vishny (1997) refer to agency problems as an essential element of the contractual view of the firm. Agency problems arise because of the separation of ownership and control. An entrepreneur/manager raises funds from investors to invest in positive NPV projects. Investors give funds to managers because they need their human capital to execute positive NPV projects. Therefore, investors, who really are the owners of the firm, give control of the firm to the managers. The managers have an implicit or explicit contract to return profits to the investors.

The separation of ownership and control in the corporation leads to agency problems as described by Jensen and Meckling (1976). In their paper Jensen & Meckling (1976) develop a model of the firm based on the agency problem. When the entrepreneur/manager is the sole owner of the firm, he (or she) will bear the entire cost of perquisite consumption. As the entrepreneur/manager invites other investors to invest in the firm, his ownership is reduced, he will bear only a partial cost of perquisite consumption and thus will increase his perquisite consumption. Apart from excess

perquisite consumption like using company funds to pay for corporate jets or club memberships, managers can also reduce effort, expand the firm beyond its optimal size, and be more risk averse. Jensen and Meckling show that managers will increase their perquisite consumption to the level where their marginal benefit of consumption equals its marginal cost. Owners (shareholders) of the firm will anticipate manager's affinity for perquisite consumption and will pay less for the proportion of their shareholding. This will lead to the reduction in the value of firm. The costs associated with the separation of ownership and control are called the agency costs of equity.

Jensen and Meckling discuss various ways of exercising monitoring and bonding activities. In general, the mechanism to control the value-reducing actions of the managers can be categorized into external mechanisms and internal mechanisms. External mechanisms include threat of take-over, managerial labor market, legal and regulatory forces, etc. Internal mechanisms include monitoring the managers using a board of directors and giving financial incentives to managers that are linked to returns to the shareholders. Also, managers can deploy resources to control their actions; for example, they can hire auditors. Jensen and Meckling assert that agency costs are the sum of the monitoring costs by the shareholders (principal), bonding cost by the managers (agent) and the residual loss remaining from unresolved agency problems.

2.1.2 External Mechanisms

Fama (1980) emphasizes that managers have substantial reputational capital invested in the firm and that the value of a manger's human capital will depend on the firm's performance. Fama, therefore, argues that the managerial labor market may help

in aligning the incentives of managers with those of shareholders. Labor market forces, however, may be constrained in disciplining managers when the firm operates in an industry that requires a very specific kind of human capital. In fact, Parrino (1997) reports that it is easier to replace a manager in a homogenous industry then in a heterogeneous one. Other than the managerial labor market, Jensen (1993) suggests that capital markets, product markets, and legal and regulatory forces may work to reduce agency problems. He also describes how these forces are incapable of fully disciplining managers.

Alchian (1950) presents an evolutionary theory of economic change. If his theory is applied to corporate governance only the firms with governance structures conducive to changing environmental conditions will survive, and in the long run product market competition will eliminate firms with inadequate governance structures. Shleifer and Vishny (1997), however, argue that product market competition will help only when the "entrepreneurs rent labor and capital on the spot market every minute at a competitive price, and hence have no resources left over to divert to their own use. But in actual practice, production capital is highly specific and sunk, and entrepreneurs cannot rent it every minute."[3] Jensen (1993) also agrees that product markets may be too slow to eliminate agency problems.

Capital markets provide shareholders with an opportunity to discipline managers. Shareholders can sell their stocks to potential acquirers who can then replace the erring

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[3] Shliefer and Vishny (1997) page 738.

managers. Jensen (1993) recognizes capital markets as an effective means of controlling the value-reducing actions of managers. He, however, argues that capital market activities are highly constrained by various legal and regulatory practices. Many states allow anti-takeover amendments that make it difficult for capital markets to work freely.

Coase (1937), Jensen and Meckling (1976), and Fama and Jensen (1983) present a contractual view of a firm. The entrepreneur/manager raises capital from investors and promises them returns on their investment. Ideally, managers and shareholders will sign a complete contract that will specify managers' actions in all the states of the world and how to allocate profits. However, as pointed out by Grossman and Hart (1986), complete contracts are technically infeasible. Legal and regulatory forces can help when the contracts are complete. But in the absence of complete contracts, legal and regulatory forces are too blunt to perfectly or completely control agency problems.

2.1.3 Internal Mechanisms

With decreased effectiveness of external mechanisms, various internal governance mechanisms have evolved. These internal mechanisms range from providing proper incentives to the managers to close monitoring by the shareholders of managers' actions. The following section provides a summary of some of these internal corporate governance mechanisms.

Incentive Contracts and Managerial Ownership: Managers can be motivated to work in the interests of shareholders by making their compensation closely tied to the gains of the shareholders. Fama (1980) and Jensen and Meckling (1976) argue for

incentive contracts like share ownership, stock options, or a threat of dismissal if profitability is poor.

The problem of reduced effort by managers can be controlled by tying a large portion of managerial compensation to stock performance. Managerial risk aversion can be controlled by increasing managers' share ownership and option ownership. Performance linked compensation, and stock and option ownership should also reduce perquisite consumption by managers.

These measures for controlling agency problems, however, come with their share of shortcomings. As argue by DeAngelo and DeAngelo (1985) and Stulz (1988), high managerial stock ownership will make a manager's dismissal more difficult. It will also reduce the probability of a takeover. Stulz further suggests there is a non-linear relation between the fraction of managerial control of voting rights and firm value. As the fraction of votes controlled by managers increases, the probability of takeover decreases but the takeover premium increases. Similarly, Morck, Shleifer and Vishny (1988) find a non-linear relationship between firm value and managerial ownership. Initially, as managerial ownership increases from zero, and managers' incentives get closely aligned with those of the shareholders, there is a decrease in agency problems and thus an increase in firm value. However, as managerial ownership increases beyond a certain level, managers tend to get more entrenched and their dismissal becomes more difficult, leading to decreased firm value.

Performance-linked compensation contracts also have their shortcomings. If the compensation of the managers is too closely linked to stock performance, managers may

take actions that benefit the firm only in the short-term. This problem may be especially severe when the CEO of a firm is close to retirement and is more concerned about short-term benefits to the firm. Shleifer and Vishny (1997) conclude that incentive contracts help in controlling agency problems but are incapable of completely solving this problem.

   CEO – Chairman Separation: Fama and Jensen (1983) divide an organization's decision process into four steps: initiation, ratification, implementation, and monitoring. They combine initiation and implementation under decision management. Ratification and implementation is similarly combined in decision control. When applied to a firm, decision management is done by the management team of the firm headed by the CEO. Decision control is done by the board of directors headed by the Chairman of the Board. When the decision manager, i.e. the CEO of the firm, is not the major residual claimant, as is the typical case with modern corporations, decision control becomes an important part of the decision process. As stated by Fama and Jensen "Without effective control procedures, such decision managers are more likely to take actions that deviate from the interests of residual claimants. An effective system for decision control implies, almost by definition, that the control (ratification and monitoring) of decisions is to some extent separate from the management (initiation and implementation) of decisions."[4] One way to separate the decision control and management processes is to have CEO – Chairman separation. Jensen (1993) also argues in favor of separation of the CEO and Chairman positions.

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[4] Fama and Jensen (1983) Page 304.

Brickley, Coles, and Jarrell (1997), however, argue that the monitoring benefits of CEO-Chairman separation may be offset by the costs associated with maintaining such leadership. These costs include the cost of sharing information between the CEO and Chairman, shifting blame in case of poor performance, etc.

Monitoring by Board of Directors: Shareholders provide capital to the entrepreneurs/managers and expect returns on their investments. However, shareholders are considered residual claimants as they are given a part of the profits only after bondholders are paid. Shareholders accept residual claims in exchange for control rights and the ability to monitor and select the managers. Due to the dispersed nature of share ownership, shareholders elect a board of directors to do the monitoring. Shareholders also have the right to vote on important corporate matters like mergers and acquisitions. It is the duty of the directors of corporate boards to look after the interest of the shareholders.

Monitoring by the board of directors itself presents an agency problem as board members (agents) are expected to monitor managers on behalf of the shareholders (principals). Shleifer and Vishny (1997) claim that the structure of a board can be an important determinant of its effectiveness.

The structure of a board is determined by the type of members that constitute the board. Yermack (2002) classifies a director as an insider if he/she is also an employee of the firm. Non-employee directors are classified as outside or gray (affiliated) directors. Gray directors are those with disclosed conflicts of interest. These conflicts include special consulting contracts for the director, former employee of the firm, a significant

business relationship between the firm and the director's main employer, a family relationship between the director and a top manager, and interlocking board memberships between the director and the CEO. All other directors are classified as outsiders.

Fama (1980) describes the board as a "market-induced mechanism" and suggests a role for inside, outside, and gray directors. According to Fama, the presence of an inside director on the board may add value to the firm as insiders are more informed and face competition from their peers for the top positions within the firm. He, however, asserts that the insiders may collude and render the board ineffective. He therefore advocates the presence of outside directors on the board. He also argues that the reputational capital of outside directors depends on the performance of the firm and thus it is in the interests of the outside directors that the firm performs well. Fama and Jensen (1983) consider boards as groups of experts and suggest that insiders play an important role in bringing information to the board. They assert that the presence of outsiders is important for making certain decisions like executive compensation where insiders may not have the right incentives.

Directors have a fiduciary responsibility to look after the interest of the shareholders. Shareholders can sue the directors if they feel they are not doing a proper job. Threat of legal action may also provide incentives to the directors.

Outside directors may also be influenced by the managers. Jensen (1993) argues that outside directors are more likely to be aligned with the top managers because the top management decides who serves on the board. He also argues that the outside board

members' stockholdings in the firms are too small to align their incentives with those of shareholders.

The structure of the board may depend on many factors including regulatory issues. Hermalin and Weisbach (1998) suggest board structure is determined by an implicit negotiation between the CEO and board. The CEO's negotiating power decreases as the performance of the firm deteriorates and the board seeks more independence. Regulatory requirements may also determine board structures for firms in the same industries. In general, outsiders are considered to be better monitors.

Blockholder: Investors with large blocks of shares may also monitor managers. Large investors can discipline managers either in their role as directors on the board (if applicable) or by selling their shares, thereby depressing the stock price and making it more likely to be a takeover target. Shleifer and Vishny (1986) argue that large shareholders can help in disciplining managers by helping an acquirer take over the firm when the firm performance is not satisfactory. Large shareholders with significant control of voting rights can also further shareholders' interest by proxy fights.

There are some disadvantages to monitoring by blockholders. Demsetz and Lehn (1985) suggest that large investors are not diversified, and hence bear excessive risk. This lack of diversification can make large shareholders less risk tolerant than other well-diversified shareholders. Large shareholders might try to treat themselves preferentially at the expense of other shareholders. Rajan (1992) presents a theoretical model explaining how banks can extract rents from investors by using their informational advantage. On the other hand, Grossman and Hart (1980) argue that

blockholders are at a disadvantage because they have to spend significant resources in monitoring managers, but the benefits of monitoring are shared by all shareholders. They refer to this problem as the free-rider problem. Shleifer and Vishny (1986), however, claim that the informational advantage to the blockholders will compensate for the free-rider problem.

Admati, Pfeiderer, and Zechner (1994) show that even though there are free rider problems associated with monitoring by large shareholders, an equilibrium can be achieved because of risk sharing considerations. Blockholders may also use market routes to exit firms with high agency problems. In fact, Bhide (1993) argues that the liquidity of stocks in the stock market may hinder effective governance. According to him, a liquid stock market reduces large shareholders' incentives to monitor because it allows them to sell their stocks easily. Ernst (1998) argues that a large investor will have two investment objectives, monitoring firms in order to benefit from reduced agency problems, and trading on private information in public markets. Liquidity makes it less costly to hold large stakes and easier to purchase addition shares. Thus, liquid markets can help in removing the free rider problem by creating opportunities for large shareholder to dispose of their shares ahead of expected decreases in price. Large shareholder by way of monitoring will have information about the firm that small shareholders won't have. In this way, large shareholders can extract rents for monitoring at the cost of small shareholders. Part of the incentive also comes from the ability to purchase addition shares in the stock market at a price that does not reflect the firms'

improvements due to monitoring by large shareholders. As a result large shareholders will increasingly engage in monitoring as the liquidity of the market increases.

Blockholders are also of different types and can have different motives for monitoring managers. Blockholders can be venture capitalists, individual investors, and financial institutions. Financial institutions can further be divided into private and public institutions. Woidtke (2002) suggests that the motivation of financial institutions can be substantially different for public versus private pension funds. She argues that the managers of public pension funds are politically elected and thus, have a political agenda that may not coincide with maximization of firm value. Romano (2001) also recognizes differences in the motivations of financial institutions in disciplining managers and argues that public pension funds sometimes influence corporations to pursue their own political and social objectives rather than encourage firms to maximize value. Some of the blockholders, such as banks and insurance companies, may also be influenced by managers as these institutions have business association with the firm.

2.2 Empirical Evidence

In this section I discuss the empirical findings regarding agency problems and the role of different corporate governance mechanisms in disciplining the managers.

2.2.1 Empirical Evidence Regarding the Agency Problem

Most of the empirical evidences on agency problems stems from the market reaction to different managerial actions and long-term effects of these actions on firm performance. Reduced effort by managers has been recognized as a significant agency

problem. Rosenstein and Wyatt (1994) report a negative stock price reaction to announcements that an executive of the firm has accepted a board seat at another firm. Booth and Deli (1996), however, report that there is no direct evidence linking such outside activity to several measures of shirking and perk consumption.

Managers may have significant personal wealth tied to the firm that may increase their risk aversion. Managers may also have different planning horizons than the shareholders. These kinds of problems have been recognized as differential risk and horizon problems. Researchers have shown that managers try to reduce the risk of the firm. Lang and Stulz (1994), Comment and Jarrell (1995), and Berger and Ofek (1995) show that managers tend to diversify the firm's total risk. They also show that shareholder reactions to diversification are negative, suggesting that diversification reduces value. The differential horizon problem was recognized by Murphy and Zimmerman (1993), who find a decline in R&D expenditure when firms have CEOs nearing retirement.

Roll (1986) argues that managers engage in takeovers to build empires. Jensen (1986) agrees with Roll and suggests that this problem is more prevalent when firms have free cash flow. Morck, Shleifer and Vishny (1990) show that bidder returns are lowest when the acquisitions are diversifying in nature. This shows that markets punish empire building exercises.

2.2.1 Empirical Evidence Regarding the Governance Mechanisms

<u>**Incentive Contracts**</u>: Equity-based compensation including stock options, restricted-stock awards, stock appreciation right, etc. has been recognized as a mechanism for reducing agency problems. Brickley, Bhagat, and Lease (1985) present evidence that the market rewards firms adopting stock based compensation. They report a 2.4% appreciation in firm value when firms adopt stock based compensation packages. DeFusco, Johnson, and Zorn (1990) report that managers tend to be more risk taking when their compensation is more equity based. They measure risk taking by measuring the variability of stock returns. Mehran (1995) also documents a positive relation between Tobin's Q and insider ownership.

The above reported evidence supports the argument that stock-based compensation helps in reducing agency problems. The effectiveness of these compensation measures is revealed by whether managers' compensation in general is sensitive to firm performance. Jensen and Murphy (1990) examine the sensitivity of CEO pay to shareholder returns for the firms listed in Executive compensation surveys published in *Forbes* from 1974 to 1986. They report that the change in CEO salary is only 75 cents for every $1000 change in shareholders wealth. They also consider the change in CEO wealth due to change in value of their stock ownership. The median change in value of CEOs' stocks is just $2.5 for every $1000 change in shareholders wealth. Thus the total effect of changes in CEO wealth is $3.25 for every $1000 change in shareholders wealth. Jensen and Murpy conclude that the CEO compensation sensitivity to shareholders wealth is too low to rectify agency problems. One of the

shortcomings of this paper is that the presence of other governance mechanisms is ignored. As Agrawal and Knoeber (1996) point out, many of these mechanisms work in tandem and other things like the managerial labor market may be affecting the pay-performance sensitivity. Palia (2001) also raises similar objections about the endogeneity of management compensation and firm performance. Using a panel data approach to control for unobservable variables, he shows that firms are in equilibrium when they endogenously set their CEO's compensation.

The nature of the industry and competitiveness within the industry may also determine pay-performance sensitivity. Ittner, Lambert, and Larcker (2003) show that new economy firms have much higher pay-performance sensitivity then old economy firm, which is consistent with an agency argument as these new economy firms are more likely to have agency problems due to higher information asymmetry. They define 'new economy' firms as those operating in the computer, software, internet, telecommunications, or networking fields. Murphy (2003), however, claims that some of the Ittner, Lambert, and Larcker results may be due to differences in accounting practices and competitive difference in the two industry types.

Pay-performance sensitivity may have changed over the last few years, mainly due to changes in the nature of firms. Murphy (1999) reports that pay-performance sensitivity nearly doubled by 1996 to approximately $6 per $1000 change in shareholder wealth. Young firms tend to have even higher pay-performance sensitivity. Baker and Gompers (1999) report much higher pay-performance sensitivity for IPO firm. They also report higher pay-performance sensitivity for venture-backed firms.

As summarized by Murphy (1999), pay-performance sensitivity depends on firm size and in the U.S. has dramatically increased during the last decade. Most of the improvement in pay-performance sensitivity is attributable to more frequent adoption of stock options.

Managerial Ownership: As suggested by Jensen and Meckling (1976), the basic source of the agency problem is less than 100% ownership by the managers. Thus, increasing managerial ownership may help in reducing agency problem. Morck, Shleifer and Vishny (1988) examine the relation between Tobin's Q and managerial and board ownership for a sample of Fortune 500 firms. They find a curvilinear relationship where Tobin's Q is an increasing function of managerial (including board members) ownership for 0% - 5% ownership levels. Tobin's Q decreases for 5% - 25% ownership levels and again increases beyond 25% managerial ownership. They suggest that this curvilinear pattern is a result of two forces acting on the firm. Between 0% and 5%, the increase in ownership provides incentives to the managers to work in the interest of the shareholders and the threat of dismissal is still substantial, but as managerial ownership rises beyond 5%, managers become entrenched. This leads to a decrease in firm value. However, beyond 25% managerial ownership, managers own such a significant portion of the firm that their incentives are very closely aligned with those of shareholders. McConnell and Servaes (1990) also find a quadratic relation between insider ownership and Tobin's Q.

The studies by Morck, Shliefer and Vishny (1988) and McConnell and Servaes (1990) suffer from a weakness in that they consider insider ownership exogenous to firm performance. It is possible that managers increase their ownership in highly profitable

firms and reduce their holdings in poorly performing firms. Objections can also be raised about their use of Tobin's Q as a proxy for firm performance. Tobin's Q is also recognized as a proxy for risk in the investments literature (Fama and French (1992)), and as a proxy for investment opportunities. Therefore, it is not clear whether Tobin's Q used in these papers really represents firm performance.

Hermalin and Weisbach (1991) address this concern about endogeneity and examine the relation using an instrumental variables approach. For a panel of 174 NYSE firms they find a curvilinear relation between management ownership and Tobin's Q. However, the concern about the use of Tobin's Q as a proxy for firm performance is not addressed. Han and Suk (1998) recognize the problems with Tobin's Q and use long-term stock returns as a measure of firm performance. They also include the independent variables squared to control for nonlinearity. They find a positive relation between firm performance and insider ownership, but the square of the insider ownership is negatively related. They use buy-and-hold returns for firm performance. However, as recognized by Han and Suk, buy-and-hold returns also suffer from serious biases.

Himmelberg, Hubbard, Palia (1999) use a panel data approach to examine the endogeneity of insider ownership and firm performance. They argue that low insider ownership may not be a suboptimal compensation design but may be endogenously determined by the contracting environment. In particular, the low levels of insider ownership might be optimal if the agency problem is not severe. They use stock price variability, firm size, capital intensity, R&D expenses, and capital expenditure rates as

determinants of insider ownership. They find that it is difficult to establish a relation between Tobin's Q and managerial ownership, after controlling for fixed effects.

Mikkelson, Partch and Shah (1997) examine the relation between operating performance and managerial ownership for IPO firms. They find that the operating performance of the firm decreases and so does managerial (including directors) ownership from a year before to a year after firms go public. Managerial (including director) ownership continues to decrease until ten years after the IPO; however, there is no significant decrease in operating performance until ten years after the IPO. They conclude that for their sample there is no significant relation between managerial ownership and firm operating performance.

Even though the evidence about the relation between managerial ownership and firm performance is mixed, there is some evidence that managerial ownership may indirectly affect firm performance by influencing other factors like top management turnover. Denis, Denis and Sarin (1997) find that the probability of top executive turnover is negatively related to insider ownership. Thus, the effect of managerial ownership on firm performance may come from the indirect effect on top executive turnover, board structure, etc.

CEO-Chairman Separation: There is mixed evidence on the benefits of having separate CEO-Chairman positions. Pi and Timme (1993), and Goyal and Park (2002) provide evidence in support of Chairman and CEO separation. They also find CEO turnover and firm performance sensitivity to be lower in case the CEO and Chairman posts are held by the same person, and report lower cost efficiency and return on assets

for banks with CEO-Chairman duality. Faleye (2003), however, reports that CEO-Chairman separation may not be an optimum solution for all kinds of firms.

Board of Directors: The quality of monitoring by the board of directors is usually attributed to its size and structure. The structure of a board refers to the kind of directors (inside, outside, or gray) it has. CalPERS[5] adopted core principles for corporate governance in 1998 and recommended: "1. A substantial majority of the board consists of directors who are independent. 2. Independent directors meet periodically (at least once a year) alone, without the CEO or other non-independent directors." Similar guidelines have been adopted by other institutions like the Council of Institutional Investors[6]. Thus, in general board independence is recognized as an important aspect of good corporate governance.

Yermack (1996) studies the relation between board size and firm performance for firms drawn from *Forbes'* rankings of 500 U.S. firms based on sales, total assets, market capitalization, and net income during 1984 - 1991. He measures firm performance using Tobin's Q and finds a negative relation between Tobin's Q and board size. To control for endogeneity, Yermack also examines whether this result is driven by the presence of other governance mechanisms. He finds that his results are robust to the presence of other governance mechanisms like CEO-Chairman separation and the presence of blockholders.

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[5] California Public Employees Retirement System, Corporate Governance Core Principles and Guidelines (1998), available at http://www.calpers-governance.org/principles/domestic/us/page01.asp

[6] Council of Institutional Investors, Shareholder Bill Of Rights (1998)

The effectiveness of the board of directors, in particular of outside directors, in monitoring managers has been a contentious issue for financial economists. Existing research in this area can broadly be divided into three categories. The first category includes studies of the effect of board composition on firm restructuring. Weisbach (1988) finds that the probability of CEO turnover following poor firm performance is higher when outsiders dominate the board. Brickley, Coles, and Terry (1994) present evidence supporting the hypothesis that outside directors vote in the interest of shareholders when considering adoptions of poison pills. Byrd and Hickman (1992) find that abnormal returns are much higher when tender offers are announced and outsiders dominate the board. Perry and Shivdasani (2000) document significant improvements in operating performance for firms with outsider-dominated boards that initiate restructuring.

Studies like Bhagat and Black (2001) constitute the second category. These studies analyze wealth effects associated with different board compositions. Bhagat and Black do not find any effect of outside directors on the long-term performance of the firm.

The third category of studies on the effectiveness of boards is related to the wealth effects of appointments and resignations of directors. Rosenstein and Wyatt (1990) study the market reaction to the appointment of outside directors and find a significantly positive stock-market reaction to the appointment of an outside director to the board. They consider the appointment of an outside director to the board as a signal of increased board activism to control managers' value reducing actions. In a similar

paper Rosenstein and Wyatt (1990) find that appointments of insiders on the board results in a near zero stock price reaction, signaling no increase in monitoring of the managers. However, they find that markets react positively when an insider with ownership level between 5% and 25% joins the board and negatively when an insider with ownership level between 0% and 5% joins the board. They infer that insiders with ownership levels between 5% and 25% have their incentives closely aligned with outside shareholders whereas an insider with ownership level between 0% and 5% does not.

Overall, the evidence regarding the effectiveness of board composition on firm performance is mixed. It appears that board independence has significant influence on discreet tasks, like poison pills adoption, CEO turnover, etc. However, in the aggregate, it is difficult to isolate the effect of board independence on firm performance.

Blockholder: Blockholders can influence management primarily in two ways. They vote on company resolutions and bring in their own resolutions, or they can sell their holdings that will depress the stock price making the firm a more likely takeover target. The evidence on the effect of blockholder on firm value is therefore focused on either blockholders influence on some discreet decision or their influence on aggregate firm value.

Jarrell and Poulson (1987) examine the role of ownership structure in takeover defense adoptions. They find that proposals like super- majority or staggered boards are adopted by firms with low institutional ownership and high inside ownership. Shivdasani (1993) shows that large outside shareholder ownership increases the likelihood that a firm is taken over. Denis and Serrano (1996) show that, if a takeover is

defeated, management turnover is higher in poorly performing firms that have blockholders. These studies support the view that large shareholders play an important role in corporate governance.

Even though evidence shows that blockholders support resolutions for improving corporate governance, their effect on shareholder wealth is debated. Wahal (1996) studies the efficacy of pension fund activism on the firms targeted by nine major pension funds during 1987 and 1993. He finds evidence for the success of pension funds in instituting confidential voting arrangements, changing the structure of the board, and redeeming poison pills. He finds a significant abnormal return around the announcement of targeting for a sub-sample of firms subject to nonproxy proposals. However, he reports an absence of any long-term stock or accounting performance improvement after these proposals. He thus concludes that though shareholder activism by large shareholders is successful in changing the governance of the target firm, they are unsuccessful in increasing the value of the firm. Karpoff, Malatesta and Walkling (1996) also report an absence of any abnormal performance following targeting by shareholder activists.

Smith (1996) examines firm characteristics that lead to shareholder activism and the effect of activism on target firm governance structure, shareholder wealth, and operating performance. His sample includes 51 firms targeted by CalPERS with 78 proposals during 1987 – 1993. He finds that firms targeted by CalPERS were large, had poor market-adjusted performance, and high levels of institutional ownership. More than 72% of the targeted firms adopted the proposed governance structure changes. He

reports positive significant returns for targeted firms that subsequently settled with CalPERS and negative significant returns for firms that did not settle. But, in accounting terms, he did not find any significant returns when adjusted for industry performance. After subtracting the cost of activism by CalPERS he found that activism efforts were still beneficial for CalPERS. He concluded that shareholder activism is largely successful in changing governance structures, and when successful, results in statistically significant increases in shareholder wealth.

Overall, the evidence is not clear regarding whether the presence of blockholders has any effect on shareholders wealth. Blockholders may have motivations other than stock price maximization. Brickley, Lease, and Smith (1988) examine how different kinds of blockholders vote for corporate governance mechanisms. They find that management sponsored anti-takeover amendments receive more support from pressure – sensitive institutional investors like insurance companies and less support from pressure-resistive institutional investors like money managers. Woidtke (2002) argues that most of the above mentioned studies treat institutional investors as homogenous. She segregates her sample of pension funds into private and public pension funds. She finds that ownership by private pension funds is associated with higher industry adjusted Tobin's Q, whereas ownership by public pension funds is not. Thus, conclusions regarding the effectiveness of blockholders may depend on the motivations of these institutions.

CHAPTER III

HYPOTHESES, DATA, AND METHODOLOGY

3.1 Hypotheses

Jensen (1993) suggests that a board dominated by independent directors is effective in controlling value reducing behavior of managers. The composition of the board of directors, however, is one of many corporate governance mechanisms that may work to control these agency costs. The loss of monitoring resulting from a decrease in board independence may be compensated for by other mechanisms, either internal to the firm (e.g., insider ownership, managerial compensation, CEO-Chairman separation) or external to the firm (e.g., regulated industry, managerial labor market, takeover activity). I examine the impact of changes in board independence resulting from director resignations while controlling for other governance mechanisms.

If board independence is an important constituent of a firm's governance structure, changes to it may have an impact on agency costs, which in turn may have a bearing on shareholder wealth. Board structure changes resulting from director resignations should therefore bring about some changes in value of stocks.

H_1:   Firms undergoing changes in board structure due to director resignations experience a nonzero market reaction.

To test H_1, I conduct an event study and measure the market reaction to director resignation announcements. I use standard event time methodology (see section 3.3) to measure abnormal returns resulting from these announcements.

The market's perception of board effectiveness can be gauged by the market reaction to an alteration in board composition. Changes in corporate governance that result in better monitoring, and thus reduce agency costs, may induce a positive market reaction. Therefore, if an outsider-dominated board is considered superior to an insider-dominated board, investors may react negatively to outsider resignations and positively to insider resignations. Assuming no replacement, gray director resignations also result in an increase in the proportion of outsiders on the board, and therefore may attract positive investor reaction.

Directors' resignations may be triggered by their expectations regarding the future of the firm. As argued by Fama (1980), a director's personal reputation depends upon the performance of the firm. If a director expects poor firm performance, he may be inclined to resign from the firm in order to preserve his reputation. Announcements of such resignations acting as signals of poor performance may result in a negative average stock price reaction, and may be independent of the type of resigning director.

H$_2$: The market reaction to director resignations depends on whether the outgoing director is an insider, outsider, or gray director.

To test H$_2$, I conduct an event study on sub-samples defined by the type of outgoing director. Directors who are also employees of the sample firm are identified as insiders. Gray directors are former employees of the firm, relatives of firm employees, or directors with significant ties to the firm, such as bankers, accountants, consultants, or attorneys of firm. All other directors are classified as outsiders.

Board independence, however, is one of the many governance mechanisms that plays a role in controlling the value-reducing behavior of managers. These governance mechanisms may work in such a way that the decrease in the strength of one mechanism is compensated for by the presence of other mechanisms. For example, board independence may not be as important for a firm with high non-affiliated block ownership as it may be for a firm with low non-affiliated block ownership. Similarly, shareholders can more easily discipline the managers of a firm that belongs to an industry with high takeover activity. Therefore, board independence may not be as critical for a firm that belongs to an industry with high takeover activity. In contrast, if a firm follows a compensation policy where managerial compensation is not linked to stock performance, board independence may become an important mechanism in disciplining the managers.

H$_3$: The market reacts more negatively to outside director resignation when the strength of other governance mechanisms is low and it reacts more positively to insider director resignation when the strength of other governance mechanisms is high.

To test H$_3$, I create measures of the strength of various corporate governance mechanisms. In order to ascertain the relation between the market reaction to director resignations and other governance mechanisms, I regress director resignation event abnormal returns on these measures of governance mechanisms. The construction of measures of governance mechanisms and the supporting literature are described below.

3.1.1 Internal Mechanisms

Insider Ownership: Jensen and Meckling (1976) argue that agency problems arise with the reduction in managerial ownership of the firm. Managers bear only a partial cost of excess perquisite as managerial ownership decreases, and yet they receive all of the benefits of perquisite consumption. Shareholders sense this increased perquisite consumption by managers and are willing to pay less for the ownership. Jensen and Meckling therefore, predict a positive monotonic relationship between insider ownership and firm value.

DeAngelo and DeAngelo (1985) and Stulz (1988) argue that high managerial stock ownership makes their dismissal much more difficult, and reduces the probability of the firm being taken over. Stulz further suggests that there is a non-linear relationship between the fraction of managerial control of voting rights and firm value. As the fraction of votes controlled by managers increases, the probability of takeover decreases but the takeover premium increases. This leads to a non-linear relationship between managerial control of voting rights and firm value. Similarly, Morck, Shleifer and Vishny (1988) also suggest a non-linear relationship between firm value and managerial ownership. Initially, as managerial ownership increases from zero, managers' incentives become more closely aligned with those of shareholders. This alignment leads to a decrease in agency problems and thus to an increase in firm value. However, as managerial ownership increases beyond a certain level, managers tend to get more entrenched and their dismissal becomes more difficult, leading to a decrease in firm value.

Director resignation represents a shift in board structure. A resignation by an outside director may lead to a decrease in independence of the board if he is replaced by an insider or not replaced at all. Similarly, insider resignations can lead to an increase in board independence. If board independence is effective for controlling agency problems, the market should react negatively when independence is decreased and positively when independence is increased. The market reaction to director resignations, however, may also depend on other governance variables like insider ownership. For example, board independence may not be crucial for a firm with very high insider ownership. On the other hand a firm with very low insider ownership may find that board structure is the most important element of corporate governance. Therefore, market reaction to director resignation may depend on existing insider ownership structure or on any number of other existing governance mechanisms.

I test the relation between the market reaction to director resignation and insider ownership using a variable *O&D Own* that represents the number of common shares owned by officers and directors as a percentage of total shares outstanding. These data are collected from Compact Disclosure and company proxy statements.

Non-Affiliated Blockholder Ownership: Blockholders who are not affiliated with the firm's management may have better incentives to monitor managers. Their incentives to monitor the firm may further increase as their stock ownership in the firm increases. Blockholders are defined as shareowners with 5% or more ownership in the firm. The variable *NonAffi-Blockown* measuring the percentage ownership of non-

affiliated blockholders is used to test the relation between blockholder ownership and board independence.

Managerial Compensation: The interests of managers may be more closely aligned with those of shareholders when a larger portion of their compensation is linked to stock performance. Thus, in the presence of high stock-based compensation, board structure may not be as important for the firm as it would be for a firm with low stock-based compensation. In other words, high stock-based compensation of managers may lead to fewer agency problems, and thus to less need for an independent board.

To test the relation between managerial compensation and market reaction to director resignations I calculate the ratio of restricted stocks and options-based compensation to total compensation as a measure for incentive-based compensation. *Incentive_comp* is measured as the fraction of CEO compensation coming from restricted stocks and stock options granted in the year prior to resignation. CEO compensation is used as a proxy for overall managerial compensation.

$$\text{Incentive\_comp} = \frac{\text{Value of Restricted stock and stock options granted in the prior year}}{\text{Total compensation}} \quad (3.1)$$

Data for Incentive_comp are gathered from Standard and Poor's ExecuComp database and are supplemented by data hand collected from proxy statements. I follow Standard and Poor's method for calculating the values of different components of compensation. The value of restricted stock grants is calculated as the number of shares granted multiplied by the closing price on the date of the grant. The

value of stock options is calculated using Black and Scholes (1973) option pricing model adjusted for continuously paid dividends:

$$N_t \times \left[S_t e^{-qT} \Phi(d_1) - K e^{-rT} \Phi\left(d_1 - \sigma T^{1/2}\right) \right] \tag{3.2}$$

where N_t is the number of options granted in year t at exercise price K, T is the number of years until expiration, r is the average monthly yield on 10-year treasury notes in year t, q is the firm's dividend yield in year t-1, S_t is the fiscal year closing price, and σ is the annualized standard deviation of stock returns over the previous sixty months. $\Phi(.)$ is the cumulative standard normal distribution, and d_1 is defined as

$$d_1 = \frac{\left[\ln\left(\frac{S_t}{K}\right) + \left(r - q + \frac{\sigma^2}{2} \right) T \right]}{\sigma T^{1/2}} \tag{3.3}$$

If the expiration date is not specified in the proxy statement, I assume that there are ten years remaining until expiration. If more than one series of options is granted in a particular year, I take a weighted average of the strike prices of each of the option grants. Total compensation is the sum of any grants of restricted stocks or stock options, base salary, bonus, and any other long-term non-incentive based compensation.

Board Independence: Resignation by an outside director may raise more concern for firms with marginally independent boards than for firms whose directors are predominantly outsiders. To measure this aspect of board structure, I construct two variables *OutDir Ratio* (measuring the percentage of outsiders on board) and *Marginal-*

Ind (an indicator variable taking a value of 1 when the firm's board has 40-60% outsiders, 0 otherwise).

CEO-Chairman Separation: The board of directors' responsibilities include hiring and firing the top managers and structuring their compensation. The board is headed by the Chairman. When the Chairman and CEO positions are held by the same person, the board may not be as effective at monitoring the CEO as it would be if it had CEO-Chairman separation. I create a dummy variable, *CEO-Chair* that has a value of 0 if the CEO and Chairman are held by the same person and 1 otherwise.

Presence of the CEO on the Board Nomination Committee: If the CEO of a firm helps determine who is nominated to be a director of the firm, the CEO may prefer a director who is friendly to his regime. As shown by Shivdasani & Yermack (1999), the board is less likely to be independent when the CEO serves on the nomination committee. In such cases, the market reaction to outside director resignations is going to be more negative because the CEO may nominate a less independent candidate to take the departing board member's place.

To test the relation between market reaction to director resignation and the presence of the CEO on the board nomination committee, I create a variable *CEO-Nominate* that takes a value 1 if the board of the sample firm has a nominating committee and the CEO is on the director nomination committee and 0 otherwise.

Capital Structure: Higher debt in capital structure may reduce free cash flow and thus may reduce agency problems related to free cash flow. I measure *D/V ind-adj*

as the ratio of a firm's debt and its total value, adjusted for the mean *D/V* of firms in the same 2-digit SIC industry as the sample firm. If high debt in the capital structure works to reduce agency problem, then the market reaction for highly leveraged firms may be less negative than for less levered firms when board independence is decreased.

3.1.2 External Mechanisms:

Regulated / Unregulated Dummy: In the case of regulated firms, like utilities and financial institutions, managers have less discretion regarding the functioning of the firm. Therefore, board independence may not be as crucial for firms in regulated industries as it is for those in unregulated industries. I test the effect of industry regulation on the market reaction to director resignation by creating a variable called *Regulated* that takes a value of 1 if the firm has 49, 60, or 69 as its 2-digit SIC code and 0 otherwise.

Institutional Investors Ownership: Institutional investors as a group usually have larger stakes in firms than do individual investors. They also may have better means to monitor the managers. Board independence may not be as important if a firm has large institutional ownership. I create a variable called *Instiown* that is equal to the total percentage ownership of institutional investors as declared in the proxy statement of the firm, and use it test the relation between institutional ownership and market reaction to director resignation.

Takeover Activity: If a firm belongs to an industry group with high takeover activity, shareholders may facilitate the removal of inefficient managers by allowing the

firm to be taken over. In this case outside domination of the board may not be as critical as it would be for a firm in an industry group with very low takeover activity. Following Agrawal and Knoeber (1996), I measure *Takeover* as the fraction of firms acquired over the preceding 7 years that belong to the same 2-digit SIC industry as the sample firm.

Most of the above stated corporate governance mechanisms work in tandem and compliment or substitute for each other. It is therefore imperative to test these hypotheses after controlling for different mechanisms in a multivariate setting.

Table 1
Distribution of Director Resignation Announcements by Years and Director Type.

The sample includes the firms for which CRSP data, Compustat data, and proxy statements (on Edgar) no more than one year prior to each resignation are available. The events that are contaminated by other significant announcement about the firm over the 3-day period before through the day after the announcement of director resignation are also excluded from the sample. The types of announcements used to identify contaminated events are about its earnings, dividends, corporate frauds, top management turnover, or merger and acquisition. Only Non-CEO director resignations are included in the sample. A director is classified as an insider if he/she is an employee of the firm. Gray directors are former employees of the firm, relatives of firm employees, bankers, accountants, consultants, or attorneys of the firm. All others are classified as outsiders.

Year	Number of Director resignations	Number of Inside Director resignations	Number of Gray Director resignations	Number of Outside Director resignations
1990	15	7	3	5
1991	19	8	5	6
1992	13	3	4	6
1993	24	10	5	9
1994	13	4	2	7
1995	31	8	9	14
1996	36	11	10	15
1997	32	12	7	13
1998	42	12	7	23
1999	43	18	6	19
2000	31	11	4	16
Total	299	104	62	133

3.2 Data

I use Lexis-Nexis and identify 802 director resignation announcements between 1990 and 2000. I begin the sample period in 1990 due to superior proxy statement availability beginning in the 1990s. I eliminate 248 events due to confounding announcement occurring on days –3 through +1. Examples of significant confounding events include earnings announcements, dividend announcements, corporate fraud revelations, top management turnover, and mergers and acquisitions. To be included in the sample, firms must have data available on CRSP, Compustat, and proxy statements (as close as possible to the announcement date, but not exceeding one year prior to the event). These requirements reduce the sample to 299 firm events.

Table 1 reports the distribution of director resignation announcements by director type and by announcement year. The final six years of the sample period contribute 72% of the viable events reflecting greater Lexis-Nexis coverage and better proxy statement availability in recent years. Also in Table 1, I show the breakdown of resignation announcements by director type. Directors who are employees of the respective sample firms are categorized as insiders. Gray directors are former employee of the firm, relatives of firm employees, and directors with significant ties to the firm (such as bankers, accountants, consultants, or attorneys of the firm). All other directors are classified as outsiders. Using this classification scheme I identify 104 inside, 62 gray, and 133 outside director resignation announcements.

The industry distribution of the sample firms is reported in Table 2. Compustat two-digit SIC codes are used for industry classifications. The majority of firms (44%)

are manufacturing firms (SIC codes 20000 to 3999). Regulated industries such as banks,

insurance companies, and utilities comprise about 12% of the sample.

Table 2
Distribution of Director Resignation Announcements by Industry Type.

The sample includes the firms for which CRSP data, Compustat data, and proxy statements (on Edgar) no more than one year prior to each resignation are available. The events that are contaminated by other significant announcement about the firm over the 3-day period before through the day after the announcement of director resignation are also excluded from the sample. The types of announcements used to identify contaminated events are about its earnings, dividends, corporate frauds, top management turnover, or merger and acquisition. Only Non-CEO director resignations are included in the sample. Compustat SIC codes are used for industry classification.

2-Digit SIC code	Industry Name	Percentage of Sample
01-09	Agriculture, Forestry & Fishing	0.33
10-14	Mining	3.68
15-17	Construction	1.00
20-39	Manufacturing	44.45
40-49	Transportation, Communication, Electric, Gas, and Sanitary Services	10.35
50-51	Wholesale Trade	4.02
52-59	Retail Trade	6.69
60-67	Finance, Insurance, and Real Estate	10.70
70-89	Services	18.73

The descriptive statistics for the sample (stated in 1995 dollars where applicable)

are reported in Table 3. The median age of the sample firm, as determined by the

number of year the firm is listed on CRSP, at the time of the director resignation is 13

years. All firms listed on CRSP have a median age of 6 years during the sampling

period. This shows that my sample firms are older than the average firm on CRSP.

Additionally, the median size of the firms ($379 million) is larger than the median

Compustat firm size of $106 million measured by total assets.

Table 3
Sample Firm Characteristics.

There are 299 director resignations in the sample during eleven-year 1990-2000 period. A director is classified as an insider if he/she is an employee of the firm. Gray directors are former employees of the firm, relatives of firm employees, bankers, accountants, consultants, or attorneys of the firm. All other directors are classified as outside directors. Annual Compustat data are collected at the end of the firm's fiscal year before the event date. Compustat data items are mentioned in parentheses.

Variable	Definition		All Director Resignations	Inside Director Resignations	Gray Director Resignations	Outside Director Resignations
Firm Age	Number of years since the firm first apprears on CRSP to the date of director resignation announcement	Mean	18.44	19.14	17.05	18.54
		Median	13.00	14.50	10.5	12.00
		(N)	(299)	(104)	(62)	(133)
Size	Total Assets ($million) (Data6)	Mean	3953.29	4668.47	1979.63	4314.10
		Median	379.08	401.10	335.07	360.62
		(N)	(299)	(104)	(62)	(133)
MV	Market value of firm ($million) = Market value of equity (Data199 * Data25) + Book value of debt (Data181 - Data35 +Data10)	Mean	5630.16	6878.09	3093.64	5838.34
		Median	559.51	649.84	601.90	491.79
		(N)	(298)	(104)	(62)	(132)
M/B	Ratio of market value of equity (Data199 * Data25) to book value of equity (Data60)	Mean	2.711	2.831	1.718	3.081
		Median	1.841	1.868	1.611	1.928
		(N)	(299)	(104)	(62)	(133)
ROAind	Ratio of net income (Data172) to total assets (Data6), adjusted for 3-digit SIC industry median values	Mean	-0.047	-0.029	-0.057	-0.057
		Median	0.000	0.009	-0.002	0.000
		(N)	(299)	(104)	(62)	(133)
ROEind	Ratio of net income (Data172) to market equity (Data199 * Data25), adjusted for 3-digit SIC industry median values	Mean	-0.532	-0.140	-0.138	-1.023
		Median	0.003	0.010	-0.008	0.002
		(N)	(299)	(104)	(62)	(133)
ROBEind	Ratio of net income (Data172) to book equity (Data60), adjusted for 3-digit SIC industry median values	Mean	-0.035	-0.299	0.370	-0.018
		Median	-0.001	0.009	-0.023	-0.003
		(N)	(299)	(104)	(62)	(133)
CAR1yr	1 Year CAR using equally weighted market index	Mean	-0.169	-0.154	-0.241	-0.146
		Median	-0.147	-0.133	-0.191	-0.142
		(N)	(299)	(104)	(62)	(133)

The fact that my firms appear to be older and somewhat larger than CRSP and Compustat firms in general is not surprising given the sample selection criteria. Typically, larger and more well-established firms are the ones that have proxy statement data available. The median market-to-book ratio of the sample is 1.84, comparable to median market-to-book ratio of 1.72 for all Compustat firms. My sample firms under-perform their peers in terms of both accounting and market-based measures of performance. For example, the mean industry-adjusted return on assets of my firms is –4.7%. The sample firms also have negative 1-year cumulative abnormal returns of 16.9%.

Table 3 also provides a breakdown of firm characteristics by director type. Comparing medians across these sub-samples reveals that firms with outside director resignation are similar to firms whose outgoing director is insider or gray. For example, median size (total assets) of firms with insider resignation is $401 million, which is comparable to $335 million for firms with gray director resignations, and $360 million for outsider resignations. The underperformance of the sample firms before the event is also similar across sub-samples defined by the type of outgoing director.

I collect board structure, officer and director ownership, and CEO compensation data from proxy statement filed within one year prior of the announcement of director resignation. Spectrum 13F filings are used for institutional ownership data. Table 4 presents mean and median values for several governance characteristics of the sample firms. The typical board size of sample firms is eight and on average 55.6% of these are outside directors.

Table 4
Sample Firm Governance Structure.

There are 299 director resignations in sample during eleven-year 1990-2000 period. Only Non-CEO director resignations are included in the sample. A director is classified as an insider if he/she is an employee of the firm. Gray directors are former employees of the firm, relatives of firm employees, or bankers, accountants, consultants, or attorneys of the firm. All others are classified as outsiders. Firms without a nominating committee are classified as those with CEO as a member of nomination committee. Firm boards are classified as marginally independent if the percentage of outside directors on board is between 40% and 60%. Stock incentive compensation of CEO includes value of restricted stock and stock option awards. Firms are considered as regulated if their two-digit SIC code is 49, 60, or 69. Industry takeover activity is defined as the fraction of firms acquired over the preceding 7 years that belong to the same two-digit SIC industry as the sample firm.

Variable	Definition		All Director resignations	Inside Director Resignations	Gray Director Resignations	Outside Director Resignations
O&D Own	Fraction of common stocks owned by officers and directors of the firm	Mean	17.64	19.58	17.09	16.38
		Median	*10.30*	*12.42*	*9.08*	*11.70*
		(N)	(299)	(104)	(62)	(133)
NonAffi-BlockOwn	Fraction of common stocks owned by Non-affiliated blockholders of the firm	Mean	13.50	11.30	13.97	15.01
		Median	*7.86*	*6.55*	*6.70*	*10.68*
		(N)	(299)	(104)	(62)	(133)
Instiown	Fraction of common stocks owned by institutional investors	Mean	38.01	39.65	36.84	37.28
		Median	*37.52*	*38.39*	*33.97*	*37.64*
		(N)	(299)	(104)	(62)	(133)
Board Size	Board size of the firm	Mean	9.34	10.36	9.00	8.70
		Median	*8*	*9*	*8*	*8*
		(N)	(299)	(104)	(62)	(133)
Staggered	Fraction of firms with staggered board	Mean	0.545	0.615	0.452	0.534
		Median	*–*	*–*	*–*	*–*
		(N)	(299)	(104)	(62)	(133)
OutDir Ratio	Fraction of the board that are outside directors	Mean	0.540	0.491	0.476	0.608
		Median	*0.556*	*0.500*	*0.500*	*0.625*
		(N)	(299)	(104)	(62)	(133)

Table 4. (*Continued*)

Variable	Definition		All Director resignations	Inside Director Resignations	Gray Director Resignations	Outside Director Resignations
Marginal-Ind	=1 if the firm's board has 40%-60% outside directors, 0 otherwise	Mean	0.395	0.500	0.290	0.361
		Median	–	–	–	–
		(N)	(299)	(104)	(62)	(133)
CEO-Chair	=1 if the firm's CEO is also the Chairman of the board, 0 otherwise	Mean	0.716	0.798	0694	0.662
		Median	–	–	–	–
		(N)	(299)	(104)	(62)	(133)
CEO-Nominate	=1 if the firm does not have a nominating committee or if the CEO is the member of nominating committee, 0 otherwise	Mean	0.726	0.750	0.839	0.655
		Median	–	–	–	–
		(N)	(299)	(104)	(62)	(133)
Comp	Total Compensation of CEO	Mean	2,074,413	1,613,792	1,522,839	2,691,723
		Median	*743,729*	*746,367*	*633,027*	*775,943*
		(N)	(299)	(104)	(62)	(133)
Incentive-Comp	Ratio of CEO stock based compensation to his total compensation	Mean	0.283	0.264	0.278	0.300
		Median	*0.156*	*0.156*	*0.155*	*0.176*
		(N)	(299)	(104)	(62)	(133)
D/V	Ratio of Long-term debt to total market value of the firm	Mean	0.225	0.244	0.188	0.227
		Median	*0.142*	*0.173*	*0.089*	*0.146*
		(N)	(298)	(104)	(62)	(132)
D/V ind-adj	Industry adjusted ratio of Long-term debt to market value of the firm	Mean	0.076	0.080	0.053	0.084
		Median	0.013	0.020	-0.001	0.019
		(N)	(298)	(104)	(62)	(132)
Regulated	=1 if the the firm's two-digit SIC code is 49, 60, or 69, 0 otherwise	Mean	0.120	0.125	0.130	0.113
		Median	–	–	–	–
		(N)	(299)	(104)	(62)	(133)
Takeover	Fraction of firms acquired over the preceding seven year that belong to the same two-digit SIC industry as the sample firm	Mean	0.216	0.226	0.201	0.215
		Median	*0.205*	*0.210*	*0.204*	*0.207*
		(N)	(299)	(104)	(62)	(133)

Outside representation on the board for the sample is slightly higher than the 45.6% reported by Shivdasani and Yermack (1999). This is consistent with Huson, Parrino, and Starks (2001) finding of a trend of increasing board independence over time. Specifically, my sample period extends from 1990 to 2000 (with a majority in the later half of the sample period), whereas Shivdasani and Yermack's sample is drawn only from 1994.

In Table 4 I show that roughly 54.5% of the sample has staggered boards. Marginally independent boards, those with 40% - 60% outside directors, are identified as having *Marginal-Ind* (a dummy variable) that is set to 1. I find that 39.5% of my firms have marginally independent boards. Higher rates of insider resignations for firms with marginally independent boards result in increases in board independence. Of the firms with insider resignations, 50% have *Marginal-Ind* equal to 1. I also show that the majority of firms have CEOs as Chairmen of the board, and that the CEO is a member of the board nominating committee. Combining the CEO and Chairman positions and having the CEO sit on the nominating committee indicate less independence of the board, all else equal.

I use officer and director ownership, non-affiliated large block (greater then 5%) ownership, and institutional ownership as measures of firm ownership structure. As shown in Table 4 mean (median) officer and director ownership of the firms is 17.6% (10.3%) which is slightly lower than 21.1% (14.4%) reported by Holderness, Kroszner and Sheehan (1999). My sample firms are larger than those examined by Holderness, Kroszner, and Sheehan which may explain the relatively lower officer and director

ownership. Non-affiliated block owners hold a mean of about 13.5% (median of 7.6%) and institutional owners hold a mean of about 38.0% (median of 37.5%) of the firms' shares. The distribution of these ownership variables is similar across sub-samples based on director type.

Table 4 reveals that mean (median) CEO compensation is $2.074 million ($743,729) in 1995 U.S. dollars. CEOs in my sample earn a mean of 28.3% (median of 15.6%) of their total compensation in form of stock incentives.[7] The percentage of incentive-based CEO pay is similar across the three sub-samples.

The market for corporate control is considered the governance characteristic of last resort. If a firm is in an industry with significant take over activity, other governance mechanisms may lose some of their importance. Following Agarwal and Knoeber (1996) I compute for each sample firm an industry-specific probability of take over. The probability is calculated using 2-digit SIC codes and is defined as the fraction of firms acquired over the preceding seven years that belong to the same 2-digit SIC industry as the sample firm. I find that on average 21.6% of firms within my firms' 2-digit SIC industry are acquired over the seven year period before the event. Agarwal and Knoeber report a 27% probability of acquisition for NYSE firms from 1981-1987.

3.3 Methodology

I capture the market's perception of the importance of director resignations using standard event study methodology. The announcement date (*AD*) is defined as the date

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[7] Hall and Murphy (2000) report a rise in S&P 500 CEOs' incentive compensation from 21% of total compensation in 1992 to 47% in 1999.

the announcement appears on the Lexis-Nexis database. I use the market model method to obtain abnormal returns using a 180-trading day (*AD – 201, AD – 20*) estimation period and the CRSP value weighted index as the market index. Firms must have returns for at least 150 trading days before the announcement day to be included in the sample.

Gompers, Ishii and Metrick (2003) use a unique way to rate the firm's governance structure. They construct a governance index (*GIM* Index) as a proxy for the degree of shareholder rights by counting the number of takeover defenses and restrictions on shareholder rights adopted by firms. There are only 79 firms in my sample that have the GIM Index available. Therefore, I construct an alternative Corporate Governance Index (*CGI*) representing the overall strength of each firm's governance structure. *CGI* is constructed using governance variables like capital structure, ownership, CEO compensation, board structure, and takeover activity in firm's industry.

The exact construction of *CGI* as discussed in the next few paragraphs is given in Table 5. Debt may reduce free cash flows and thus help alleviate agency problem. Firms with debt ratios greater than its industry average get a score of 1, otherwise the score is -1. Incentive compensation may be used to align managerial interest with those of shareholders. However, as recognized by Erickson, Hanlon and Maydew (2004), very high levels of stock based compensations may create incentives for managers to commit accounting fraud. I therefore, give a score of -1 to firms in the bottom or the top 1/3 of

my sample sorted by the ratio of CEO stock-based compensation to total compensation. Otherwise the score is 1.

Morck, Shleifer and Vishny (1988) show a piecewise linear relation between managerial ownership and market valuation. They demonstrate a decreasing relation when managerial ownership is less than 5% or greater than 25%, and an increasing relation when managerial ownership is between 5% and 25%. Following their evidence, I assign a score of 1 for firms with officer and director ownership between 5% and 25%, and score of -1 otherwise. Non-affiliated blockholders and institutional holders may exercise influence if they have higher stockholdings. In the absence of well-specified guidelines regarding the size of block ownership needed to wield influence, I use a cut-off of 10%. Firms with Institutional ownership greater than 10% get a score of 1, otherwise the score is -1. Non-affiliated block ownership is treated in the same way as institutional ownership.

Firms get a score of -1 if the CEO is also the Chairman of the board, and 1 otherwise. Similarly firms without a nominating committee and firms with the CEO as a member of the nominating committee get scores of -1, and all other firms get scores of 1. To capture the importance of board independence, I assign a score of 1 when firms have more than 50% outsiders on the board and -1 otherwise. Firms with high industry takeover activity are assigned a score of 1, and others are assigned a score of -1.

Table 5
Construction of Corporate Governance Index.

Variable[#]	Condition	Score	Mean	Standard Deviation
D/V ind-adj	<0	-1	0.141	0.992
D/V ind-adj	>=0	1		
Incentive-comp	Bottom 1/3	-1		
Incentive-comp	Middle 1/3	1	-0.324	0.948
Incentive-comp	Top 1/3	-1		
O&D own	<=5%	-1		
O&D own	5% < O&Down < 25%	1	0.081	0.998
O&D own	>=25%	-1		
NonAffi-BlockOwn	< 10%	-1	0.311	0.992
NonAffi-BlockOwn	>= 10%	1		
Instiown	< 10%	-1	0.632	0.776
Instiown	>= 10%	1		
CEO-Chair	=1	-1	-0.431	0.904
CEO-Chair	=0	1		
CEOnominate	=1	-1	-0.452	0.894
CEOnominate	=0	1		
OutDir ratio	< 50%	-1	0.262	0.967
OutDir ratio	>= 50%	1		
Takeover	Bottom 1/2	-1	-0.030	1.001
Takeover	Top 1/2	1		
CGI			0.185	2.940

[#] The variables are defined as follows:

O&D own	= Fraction of common stocks owned by officers and directors of the firm.
NonAffi-BlockOwn	= Fraction of common stocks owned by non-affiliated blockholders of the firm.
Instiown	= Fraction of common stocks owned by institutional investors
Inventive-Comp	= Ratio of CEO stock based compensation to his total compensation.
OutDir Ratio	= Fraction of the board that are outside directors.
CEO-Chair	= 1 if the firm's CEO is also the Chairman of the board, 0 otherwise.
CEO-Nominate	= 1 if the firm does not have a nominating committee or if the CEO is a member of the nominating committee, 0 otherwise.
D/V ind-adj	= Industry adjusted ratio of long-term debt to market value of the firm.
Takeover	= Fraction of firms acquired over the preceding 7 years that belong to the same two-digit SIC industry as the sample firm.
CGI	= Firm's corporate governance index measured as the sum of scores for above listed governance variables.

The Corporate Governance Index (*CGI*) is calculated by accumulating the scores from the different governance variables. The exact construction is given in Table 5. *CGI* for my sample firms has a mean of 0.185 and a standard deviation of 2.94, suggesting that *CGI* for sample firms have good amount of variation. I also consider other methods of constructing the corporate governance indices by excluding some of the above stated governance variables. The results are robust as long as the ownership and compensation variables are included. Results also hold for *CGI*s based on different break-points for allocating scores for governance variables.

The following regression model is used to determine the significance of the corporate governance index in determining the market reaction to director resignations:

$$CAR^f = \alpha + \alpha_{in}D_{in}^f + \alpha_{out}D_{out}^f + \beta_{cgi}CGI^f + \beta_{ing}D_{in}^f CGI^f + \beta_{outg}D_{out}^f CGI^f + \beta_c CV_c^f + \varepsilon^f \quad (3.4)$$

Where *CAR^f* is the event study three-day abnormal return around the director resignation announcement for firm *f*. D_{out}, and D_{in} are indicators for outside and inside director resignation respectively. The following tests are performed to provide statistical inferences regarding the effect of the corporate governance index (*CGI*) on announcement period returns for director resignations:

Outside director resignation:	$H_0 : \beta_{outg} + \beta_{cgi} = 0$
Inside director resignation:	$H_0 : \beta_{ing} + \beta_{cgi} = 0$
Gray director resignation:	$H_0 : \beta_{cgi} = 0$

Multivariate Analysis: I perform multivariate regression analysis to evaluate the effect of firms' existing governance structures on market perceptions of changes in board independence. The following specifications are used for these tests:

$$CAR^f = \alpha + \alpha_{in} D_{in}^f + \alpha_{out} D_{out}^f + \sum_{g=1}^{G} \beta_g GV_g^f + \sum_{g=1}^{G} \beta_{ing} D_{in}^f GV_g^f +$$

$$\sum_{g=1}^{G} \beta_{outg} D_{out}^f GV_g^f + \sum_{c=1}^{C} \beta_c CV_c^f + \varepsilon^f \qquad (3.5)$$

Where CAR^f is define as in 3.4, and D_{out}, and D_{in} are indicators for outside and inside director resignation respectively. GV is a set of g corporate governance variables. CV is a set of c control variables. For this specification I control for firm age, size as measured by log of total assets, industry-adjusted return on equity, and past stock performance. The following tests are conducted to examine the effect of governance variables on the market reaction to director resignations:

Outside director resignation: $H_0 : \beta_{outg} + \beta_g = 0$

Inside director resignation: $H_0 : \beta_{ing} + \beta_g = 0$

Gray director resignation: $H_0 : \beta_g = 0$

I control for firm age because firms may require different levels of board oversight depending upon their age. However, the exact effect of age on the importance of board independence is not clear. One can argue that younger firms may require more board oversight because they may not have other mechanisms in place. Similar argument can also be made for more matured firms as they may have more free cash-flow. Agency costs in larger firms may be less susceptible to change in board

independence as larger firms are more closely followed by analysts. A firm's past performance may also affect the market reaction to a director resignation because firms with deteriorating performance may require more board oversight. I thus include firm age, size (as measured by log of total assets), industry-adjusted return on equity, and past stock performance to control for the above stated effects.

CHAPTER IV

RESULTS

In this chapter, I discuss the results of the tests of the hypotheses described in Chapter III. The first section discusses the event-study results. Multivariate test results are described in the second and third sections of this chapter. A conclusion of the results is found in the last section.

4.1 Market Reaction to Director Resignation

Investor reaction to director resignations is reported in Table 6. Cumulative abnormal returns (*CAR*) are based on the market model and use a CRSP value weighted market index. To isolate investor reaction to an event, it is crucial to know when the relevant information is available to the market. The newswire sources do not capture the exact time of the resignation, and announcements are sometimes made after the close of the major stock markets. In order to overcome the ambiguity regarding the timing of the announcement I consider three windows (-1, 0), (0, 1), and (-1, 1) for the event study analysis. Market model parameters are calculated using 180-trading day returns prior to the event. To increase the reliability of the estimate, I require firms to have at least 150 days of returns data before the event. I also estimate *CAR*s with different parameter estimation periods and simple market-adjusted returns to control for biases introduced by market model parameters. Sine the results are robust to event study model specifications and parameter estimation periods, I report only those based on the market model.

Table 6
Announcement Period Abnormal Returns for Director Resignations.

Two-day and three-day cumulative abnormal returns associated with announcements of 299 director resignations over eleven years (1990-2000). The events that are contaminated by other significant announcement about the firm over the 3-day period before through the day after the announcement of director resignation are also excluded from the sample. Firms are classified as regulated if their two-digit SIC code is 49, 60, or 69. CRSP value-weighted index is used to calculate abnormal returns. Market model parameters are calculated using 180 trading-days data prior to the event. p-values are reported in parentheses from two-tailed test using z-scores for Mean CAR, and t-test for difference in mean.

Panel A. Mean CAR				
Event Window	*All Firms*		*Non-regulated Firms*	
	Mean CAR	Positive : Negative	Mean CAR	Positive : Negative
	All director resignations (N = 299)		All director resignations (N = 263)	
(-1,0)	-0.55%*	137:162	-0.69%**	117:146
	(0.06)		(0.02)	
(0,+1)	-0.78%**	132:167	-0.86%***	116:147
	(0.02)		(0.01)	
(-1,+1)	-1.18%***	129:170	-1.33%***	109:154
	(0.00)		(0.00)	
	Inside director resignations (N = 104)		Inside director resignations (N = 91)	
(-1,0)	-0.63%	42:62	-0.65%	39:52
	(0.16)		(0.24)	
(0,+1)	-0.17%	46:58	-0.02%	42:49
	(0.68)		(0.73)	
(-1,+1)	-1.17%**	41:63	-1.03%*	37:54
	(0.05)		(0.09)	
	Gray director resignations (N = 62)		Gray director resignations (N = 54)	
(-1,0)	0.70%	36:26	0.62%	29:25
	(0.38)		(0.79)	
(0,+1)	-0.93%**	24:38	-1.00%**	21:33
	(0.04)		(0.05)	
(-1,+1)	0.02%	31:31	-0.12%	25:29
	(0.71)		(0.41)	
	Outside director resignations (N = 133)		Outside director resignations (N = 118)	
(-1,0)	-1.07%**	59:74	-1.32%***	49:69
	(0.03)		(0.01)	
(0,+1)	-1.20%	62:71	-1.44%**	53:65
	(0.11)		(0.03)	
(-1,+1)	-1.74%**	57:76	-2.12%***	47:71
	(0.02)		(0.00)	

Table 6 (*Continued*)

Panel B. Test for difference in mean CARs

Event Window	All Firms			Non-regulated firms		
	Outside - Inside	Outside - Gray	Inside - Gray	Outside - Inside	Outside - Gray	Inside - Gray
(-1,0)	-0.44%	-1.77%**	-1.33%	-0.67%	-1.94%**	-1.27%
	(0.54)	(0.04)	(0.11)	(0.42)	(0.05)	(0.18)
(0,+1)	-1.03%	-0.27%	0.76%	-1.42%	-0.44%	0.98%
	(0.31)	(0.80)	(0.42)	(0.20)	(0.72)	(0.33)
(-1,+1)	-0.57%	-1.76%	-1.19%	-1.09%	-2.00%	-0.91%
	(0.60)	(0.13)	(0.26)	(0.36)	(0.13)	(0.44)

***, **, * indicate statistical significance at the 1%, 5%, or 10% levels, respectively, in two-tailed tests.

Panel A of Table 6 presents the mean *CAR* for all director resignations as well as for each type of resigning director. Investor reactions for the sub-sample of non-regulated firms are also reported. Sample firms on average lose about 1.18% of their market value during the 3-day window around the day of announcement. The market reaction is stronger for non-regulated firms that lose about 1.33% of their market value during the same period. *CAR*s for (-1,0) and for (0, +1) are also negative and statistically significant. These results clearly establish the importance of director resignations as perceived by investors, suggesting that board structure changes have an impact on firm value. The result is also consistent with H_1, which states that firms undergoing changes in board structure due to director resignations experience a nonzero market reaction.

To gauge the relative importance of each type of director resignation, I evaluate *CAR*s for subgroups defined by director type. As revealed by the *CAR*s for each window, the market reaction to director resignations is strongest when an outside director resigns. Sample firms suffer a 1.74% decline in market value during the three-day (-1, 1) event window when an outside director resigns. Rosenstein and Wyatt

(1990) find a 0.22% positive market reaction to outside director appointment, suggesting that investors are more concerned with outsider resignations than their appointments. The market reaction to insider resignations is -1.17%, and to gray director resignations is insignificant during the (-1, 1) event window. Further examination of other event windows demonstrates the significance of outside director resignation when compared with insider or gray director resignations. Event window (-1, 1) shows that event returns are significantly different from zero only for outside directors. For firms operating in non-regulated industries, the market reaction to outsider resignations is even more pronounced. Non-regulated firms lose about 2.12% of their market value with outside director resignation, whereas the fall in market value for firm facing insider resignations is only 1.03%.

Panel B of Table 6 reports test of differences in mean *CAR*s for each type of resigning director. Even though the magnitudes of market reaction are different for different director types, the means are not statistically different. The insignificant difference in means is inconsistent with H_2. This evidence is puzzling because it suggests that investors react to board changes rather than to losses or gains in board independence.

The univariate statistics reported in Table 6 hide much of the variation in the *CAR*s. Some of this variation is captured in the ratio of number of firms facing positive versus negative reactions. It is interesting to note that the proportion of firms suffering a negative market reaction for outsider resignations is much higher than the proportion of firms suffering a negative market reaction when other kinds of directors resign. A larger

market reaction to outsider resignation indicates investor concern regarding board independence. However, negative market reactions are observed for insider and gray director resignations as well.

Another possible explanation for similar investor reactions to all types of director resignations is that investors anticipate worsening performance of these firms. Fama (1980) argues that a director's reputation depends on the firm performance. Directors may try to save their reputations by resigning from boards of firms with anticipated poor performance. One can thus argue that the investor reaction to director resignations is related to firm performance rather than to the change in board structure.

Along with board independence there are many other mechanisms available to improve a firm's governance. If other governance mechanisms are quite strong, investors may be less concerned over a loss in board independence, and vice versa. However, if investor reaction to director resignations is only due to a signal about a firm's deteriorating condition and not about the concerns regarding a loss or gain in board independence, the *CAR*s should be unrelated to the existing governance structure. Therefore, differences in *CAR*s across firms facing similar types of director resignations may insinuate that investors do not evaluate board structures in isolation. Investors may judge the value of changes in board structure in light of the strength of existing governance structures. In particular, some governance mechanisms may act as substitutes for board independence. I address these issues next by examining the market reactions in a multivariate setting.

4.2 Market Reaction and Corporate Governance Index

To ascertain whether the market response to director resignations has any relation to firms existing governance structures, I regress the *CARs* on a corporate governance index and dummy variables indicating the type of outgoing director. If the director resignation is simply a signal about the firm's worsening performance, the market response to this change in board independence should be unrelated to the existing governance structure. However, if investors believe that a change in the board may affect shareholder protection, they may react more strongly to a loss in board independence for firms with weak governance.

The corporate governance index (*CGI*) represents the overall strength of each firm's governance characteristics. Gompers, Ishii and Metrick (2003) use a governance index measuring the number of takeover deterrent that a firm has. They find that firm's Tobin's Q is related to their governance index. My measure of governance index (*CGI*) is based on many governance aspects of the firm. Specifically, *CGI* is constructed using governance variables such as ownership, CEO compensation, board structure, capital structure, and takeover activity in each firm's industry. The exact construction is given in Table 5.

Table 7 reports OLS regression coefficients for models regressing the three-day *CAR* on each firm's *CGI* (equation 3.4). To isolate the influence of *CGI* on the market response to each type of director resignation, I interact *CGI* with indicator variables for director type (*Din* and *Dout* represent inside and outside directors respectively).

The effect of *CGI* on the market response to gray director resignations is captured by β_{cgi}. Panel B of Table 7 reports the effect of *CGI* on *CAR* for inside and outside directors, and is revealed by ($\beta_{ing} + \beta_{cgi}$) and ($\beta_{outg} + \beta_{cgi}$) respectively.

Table 7
OLS Regression Estimates of Three-day CAR on Firm's Corporate Governance Index (CGI).

There are 299 director resignations in sample during eleven-year 1990-2000 period. Only Non-CEO director resignations are included in the sample. A director is classified as an insider if he/she is an employee of the firm. Gray directors are former employees of the firm, relatives of firm employees, bankers, accountants, consultants, or attorneys of the firm. All others are classified as outsiders. The regression can be described in the following model:

$$CAR^f = \alpha + \alpha_{in}D^f_{in} + \alpha_{out}D^f_{out} + \beta_{gvi}CGI^f + \beta_{ing}D^f_{in}CGI^f + \beta_{outg}D^f_{out}CGI^f + \beta_c CV^f_c + \varepsilon^f$$

Panel A. Regression estimates		
Variables[#]	All Firms	Non-regulated firms
	Coeff	Coeff
Constant	-0.012	-0.005
Din	-0.013	-0.007
Dout	-0.020	-0.021
CGI	-0.004	-0.005
Din * CGI	0.006	0.007
Dout * CGI	0.009**	0.010**
Firm Age	-0.001	-0.001
Ln Size	0.004	0.003
CAR1yr	0.023***	0.031***
adj-R^2	0.042	0.049
Number of Obs	296	261
Prob>F (test for joint significance)	0.01	0.01
Panel B. Joint Tests		
CGI + Din*CGI	0.002	0.002
CGI + Dout*CGI	0.005**	0.005**

***, **, * indicate statistical significance at the 1%, 5%, or 10% levels, respectively, in two-tailed tests.

\# The variables are defined as follows

CAR^f is three-day event return around director resignation announcement for firm f.
D_{in} is indicator for inside director resignation
D_{out} is indicator for outside director resignation
CGI is firm's corporate governance index
Ln Size   = Logarithm of total assets of the firm.
ROE ind-adj   = Industry adjusted ratio of net income to market value of equity.
CAR1yr   = One-year CAR using value weighted market index.

A significant coefficient estimate for the interaction variable for *Dout* and *CGI* is consistent with the notion that the market reaction to a loss of board independence depends on the strength of the firm's corporate governance. The total effect of *CGI* on *CAR* for outsider resignations is 0.005 (reported in panel B). Standardizing this coefficient by multiplying by the standard deviation of *CGI* and dividing by the standard deviation of *CAR* for firms with outsider resignation yields a coefficient of 0.16. This implies that holding everything else constant, a firm with *CGI* one standard deviation higher than the sample mean (i.e. *CGI* of 3.29) suffers a 0.16 standard deviation less negative event-return than the sample mean return (i.e. -0.18% return as compared to a sample mean return of -1.74%). This suggests that firms with high *CGI* suffer a much less negative investor reaction than a firm with low *CGI* when an outsider resigns. The regression coefficients for *CGI* and *Din*CGI* are not significantly different from zero, suggesting that *CGI* has little influence on investor response to inside or gray director resignation. Similar relations between *CGI* and *CAR* are observed for the sample excluding regulated firms.

The relation between *CAR* and *CGI* is robust to inclusion of past stock performance in the model specification (see Table 7). Therefore, it also addresses the concern raised in the previous section that investor reaction to director resignation is only due to the concern of deteriorating performance, and not because of the concern for loss in board independence. The positive regression coefficient of one-year cumulative returns (*CAR1yr*) suggests positive association between event returns and past stock performance. It indicates that investors are more concerned about director resignations

for firms that have underperformed in the past. Combining this piece of evidence with the evidence a of positive association between *CAR* and *CGI* for outsider resignation illustrates that, controlling for past performance, investors react more negatively to a loss in board independence especially when the firm has weaker governance.

The above evidence is consistent with the idea that investor reaction is less negative when firms with outside director resignations have strong overall governance, and other governance mechanism may work as substitutes for board independence. It is also consistent with H_3, which states that the market reacts more negatively to outside director resignation when the strength of other governance mechanisms is low.

The relation between *CGI* and *CAR* for outsider resignation suggests that other governance mechanisms may act as substitutes for loss in board independence. Some governance mechanisms may be better substitutes for board independence than others. The *CGI* is a composite index and it may conceal the relative importance of individual governance variables. Next, I evaluate different governance mechanisms for their ability to substitute for board independence as a means of protecting shareholder interests.

4.3 Multivariate Analysis

To identify governance mechanisms that are potential substitutes for board independence, I regress *CAR* on individual governance variables (equation 3.5). The OLS regression results are reported in Table 8. The effect of each governance mechanism on *CAR* for each type of director resignation is captured by interacting *Din* and *Dout* with each governance mechanism. The coefficients β_g, $\beta_{ing} + \beta_g$, and $\beta_{outg} + \beta_g$

capture the influence of each governance variable on *CAR* when the outgoing director is a gray, insider, or outsider respectively. The models reported in this Table also control for other factors like firm age, size, and past performance that may influence investor reactions. Model 1 reports coefficient estimates for all governance variables considered. As F-test for model 1 rejects the joint significance of the governance variables taken together, I include those variables in models 2, 3, and 4 that are statistically significant in some cases.

Consistent with the *CGI* regression results, I find that officer and director ownership (*O&D own*), non-affiliated block ownership (*NonAffi-Blockown*), and CEO incentive-compensation (*Incentive-Comp*) are related to *CAR* for outside director resignations. None of the governance variables shows any significance for insider or gray director resignations. *O&D own*, and *NonAffi-Blockown* also show a non-linear relation with *CAR*. In particular, *O&D own* is negatively related with *CAR* and square of *O&D own* is positively related with *CAR*. This is consistent with Morck, Shleifer and Vishny's (1988) findings of a nonlinear relation between firm value and insider ownership. Investors react more negatively to outside director resignation when firm's officers and directors have small ownership. However, investor reaction is less negative for firms with higher levels of O&D ownership. This relation between *O&D own* and *CAR* suggests that board independence is more valuable for shareholders at lower levels of insider ownership. When O&D ownership is high, the incentives of managers are closely aligned to those of shareholders and investors show less concern for the lost board independence.

Table 8
OLS Regression Estimates of Three-day CAR on Firm Characteristics.

There are 299 director resignations in sample during eleven-year 1990-2000 period. Only Non-CEO director resignations are included in the sample. A director is classified as an insider if he/she is an employee of the firm. Gray directors are former employees of the firm, relatives of firm employees, bankers, accountants, consultants, or attorneys of the firm. All others are classified as outsiders. The regression can be described in the following model:

$$CAR^{f} = \alpha + \alpha_{in} D_{in}^{f} + \alpha_{out} D_{out}^{f} + \sum_{g=1}^{G} \beta_{g} GV_{g}^{f} + \sum_{g=1}^{G} \beta_{ing} D_{in}^{f} GV_{g}^{f} + \sum_{g=1}^{G} \beta_{outg} D_{out}^{f} GV_{g}^{f} + \sum_{c=1}^{C} \beta_{c} CV_{c}^{f} + \varepsilon^{f}$$

Variables[#]	Model 1			Model 2			Model 3			Model 4		
	Co-eff	βing+βg	βoutg+βg	Co-eff	βing+βg	βoutg+βg	Co-eff	βing+βg	βoutg+βg	Co-eff	βing+βg	βoutg+βg
Constant	-0.038			-0.045			-0.025			-0.031		
Din	0.058	0.020		0.047	0.002		0.012	-0.013		-0.004	-0.035	
Dout	-0.053		-0.091*	-0.026		-0.071*	-0.028		-0.053	0.002		-0.029
O&D own	0.354	-0.208	-0.258**	0.287	-0.201	-0.262**	0.280	-0.191	-0.246**	0.287	-0.147	-0.258**
O&D own^2	-0.537	0.278	0.367**	-0.439	0.268	0.380**	-0.424	0.276	0.352**	-0.435	0.231	0.360**
NonAffi-BlockOwn	0.000	0.209	0.353**	0.050	0.223	0.340**	0.030	0.211	0.332**	0.019	0.186	0.319**
NonAffi-BlockOwn^2	0.008	-0.302	-0.481*	-0.082	-0.324	-0.470*	-0.055	-0.243	-0.480*	-0.047	-0.229	-0.449*
Instiown	0.004	-0.190	0.093	0.006	-0.161	0.097	-0.076	-0.017	0.055*	-0.068	-0.011	-0.038
Instiown^2	-0.104	0.211	-0.206*	-0.109	0.170	-0.206*						
Incentive-Comp	0.019	-0.053*	-0.053**	0.022	-0.047	-0.056**	0.013	-0.043	-0.058***	0.014	-0.041	-0.051**
OutDir Ratio	-0.004	-0.030	0.045	-0.016	-0.037	0.039	-0.014	-0.047	0.048			
Marginal-Ind	0.015	-0.006	0.008									
CEO-Chair	-0.011	-0.024	0.009									
CEO-Nominate	-0.021	-0.005	-0.005									
D/V ind-adj	-0.025	0.029	-0.032	-0.018	0.018	-0.035	-0.023	0.018	-0.028			
Regulated	-0.008	-0.048*	-0.004	-0.006	-0.035	-0.006						
Takeover	0.057	0.063	0.064									
Firm Age	-0.001			-0.001*			-0.001			-0.001		
Ln Size	0.010***			0.011***			0.009***			0.007**		
ROE ind - adj	0.004											
CAR1yr	0.028***			0.025***			0.024***			0.021**		
adj-R^2	0.031			0.0631			0.0613			0.0544		
Number of Obs	297			297			297			298		
Prob>F (test for joint significance)	0.19			0.03			0.02			0.02		

***, **, * indicate statistical significance at the 1%, 5%, or 10% levels, respectively, in two-tailed tests.

Table 8 (*continued*)
[#] The variables are defined as follows:

CAR_f is three-day event return around director resignation announcement for firm *f*.
Din is indicator for inside director resignation
Dout is indicator for outside director resignation
GV is a set of firm's (*G*) governance variables
CV is a set of firm's (*C*) control variables

Governance Variables:

O&D own	= Fraction of common stocks owned by officers and directors of the firm.
O&D own^2	= Squared (O&D own).
NonAffi-BlockOwn	= Fraction of common stocks owned by non-affiliated blockholders of the firm.
NonAffi-BlockOwn^2	= Squared (NonAffi-BlockOwn).
Instiown	= Fraction of common stocks owned by institutional investors
Instiown^2	= Squared (Instiown)
Inventive-Comp	= Ratio of CEO stock based compensation to his total compensation.
OutDir Ratio	= Fraction of the board that are outside directors.
Marginal-Ind	= 1 if the firm's board has 40% - 60% outside directors, 0 otherwise.
CEO-Chair	= 1 if the firm's CEO is also the Chairman of the board, 0 otherwise.
CEO-Nominate	= 1 if the firm does not have a nominating committee or if the CEO is a member of the nominating committee, 0 otherwise.
D/V ind-adj	= Industry adjusted ratio of long-term debt to market value of the firm.
Regulated	= 1 if the firm's two-digit SIC code is 49, 60, or 69, 0 otherwise.
Takeover	= Fraction of firms acquired over the preceding 7 years that belong to the same two-digit SIC industry as the sample firm.

Control Variables:

Firm Age	= Number of years since the firm first apprears on CRSP to the date of director resignation announcement.
Ln Size	= Logarithm of total assets of the firm.
ROE ind-adj	= 3-digit SIC Industry adjusted ratio of net income to market value of equity.
CAR1yr	= One-year CAR using value weighted market index

The positive coefficient of *NonAffi-Blockown* for outsider resignations is consistent with non-affiliated blockholders providing a monitoring function for the firm. Economically, the event returns for outsider resignation are higher (or less negative) by 3.4% (from model 2) when there is a 10% increase in non-affiliated block ownership. This relationship turns negative for very high non-affiliated block ownership, suggesting that at such high levels, increasing non-affiliated block ownership does not add value as a corporate governance mechanism. This result is consistent with the hypothesis that non-affiliated block ownership works as a substitute for board independence.

Firms that reward their CEOs with more stock-based compensation suffer a more negative market response for outsider resignations. A negative coefficient of -0.056 for *Incentive-comp* in model 2 indicates that for every 10% increase in incentive compensation, event returns for firms with outsider resignations are lower by 0.56%. This is contrary to the standard belief that higher incentive compensation for CEOs leads to better corporate governance. However, as shown by Erickson, Hanlon, and Maydew (2004), the possibility of corporate fraud is an increasing function of the CEO's incentive compensation. The findings reported in Table 8 are consistent with incentive compensation at very high levels exacerbating the agency problem rather than being a potential mitigating factor.

The above results hold after controlling for firm age, size, and past performance. Firm size (measured by log of total assets) and past stock performance (measured by one year cumulative abnormal returns before the event) are positively related to *CAR* suggesting that larger firms and firms that outperform the market face less erosion in

value when outsiders resign. Firm age and accounting return appear to be unrelated to investor reaction to director resignations.

As a robustness check, I also run similar regression models for non-regulated firms only. These results are reported in Table 9. Results similar to those reported in Table 8 for all firms are observed for this sample also.

Table 9
OLS Regression Estimates of Three-day CAR on Firm Characteristics for Non-Regulated Firms.

There are 262 director resignations in sample for non-regulated firms during eleven-year 1990-2000 period. Only Non-CEO director resignations are included in the sample. A director is classified as an insider if he/she is an employee of the firm. Gray directors are former employees of the firm, relatives of firm employees, bankers, accountants, consultants, or attorneys of the firm. All others are classified as outsiders. Firms are classified as regulated if their two-digit SIC code is 49, 60, or 69.
The regression can be described in the following model:

$$CAR^f = \alpha + \alpha_{in} D_{in}^f + \alpha_{out} D_{out}^f + \sum_{g=1}^{G} \beta_g GV_g^f + \sum_{g=1}^{G} \beta_{ing} D_{in}^f GV_g^f +$$
$$\sum_{g=1}^{G} \beta_{outg} D_{out}^f GV_g^f + \sum_{c=1}^{C} \beta_c CV_c^f + \varepsilon^f$$

Variables[#]	Model 1			Model 2		
	Co-eff	$\beta ing+\beta g$	$\beta outg+\beta g$	Co-eff	$\beta ing+\beta g$	$\beta outg+\beta g$
Constant	-0.027			-0.021		
Din	0.000	-0.027		0.024	0.003	
Dout	-0.005		-0.032	-0.025		-0.047
O&D own	0.285	-0.119	-0.269**	0.273	-0.169	-0.243*
O&D own^2	-0.443	0.190	0.370**	-0.423	0.248	0.344**
NonAffi-BlockOwn	0.019	0.151	0.463***	0.028	0.155	0.421***
NonAffi-BlockOwn^2	-0.034	-0.153	-0.707**	-0.047	-0.138	-0.635**
Instiown	-0.085*	-0.031	-0.060	-0.092*	-0.036	-0.065*
Incentive-Comp	0.007	-0.052	-0.060**	0.010	-0.051	-0.066***
OutDir Ratio				-0.010	-0.056	0.033
D/V ind-adj				-0.031	-0.002	-0.043
Firm Age	-0.001*			-0.001*		
Ln Size	0.010***			0.010***		
CAR1yr	0.034***			0.033***		
adj-R^2	0.0823			0.0699		
Number of Obs	262			262		
Prob>F (test for joint significance)	0.00			0.02		

***, **, * indicate statistical significance at the 1%, 5%, or 10% levels, respectively, in two-tailed tests.

Table 9 (*continued*)
[#] The variables are defined as follows:

      CAR_f is three-day event return around director resignation announcement for firm f.
      Din is indicator for inside director resignation
      Dout is indicator for outside director resignation
      GV is a set of firm's (*G*) governance variables
      CV is a set of firm's (*C*) control variables

Governance Variables:

O&D own	= Fraction of common stocks owned by officers and directors of the firm.
O&D own^2	= Squared (O&D own).
NonAffi-BlockOwn	= Fraction of common stocks owned by non-affiliated blockholders of the firm.
NonAffi-BlockOwn^2	= Squared (NonAffi-BlockOwn).
Instiown	= Fraction of common stocks owned by institutional investors
Inventive-Comp	= Ratio of CEO stock based compensation to his total compensation.
OutDir Ratio	= Fraction of the board that are outside directors.
D/V ind-adj	= Industry adjusted ratio of long-term debt to market value of the firm.

Control Variables:

Firm Age	= Number of years since the firm first apprears on CRSP to the date of director resignation announcement.
Ln Size	= Logarithm of total assets of the firm.
ROE ind-adj	= 3-digit SIC Industry adjusted ratio of net income to market value of equity.
CAR1yr	= One-year CAR using value weighted market index

The above results suggest that investor reaction to outsider resignation depends on the strength of the firm's other governance mechanisms. In particular, officer and director ownership, and non-affiliated block ownership can potentially act as substitutes for board independence. I also find that higher levels of CEO incentive compensation require more board oversight. Therefore, the market reaction to a loss in board independence is more negative for higher CEO incentive compensation.

This analysis assumes that the outside director resignation leads to a loss in board independence, and inside and gray director resignation leads to a gain in board

independence. This assumption may not be true if the outgoing director is replaced by another director of similar type. To test whether or not director resignation really leads to change in board independence, I examine the board structure from the proxy statement available after the resignation announcement. Post-event proxy statements are available with a mean lag of 207 days, and thus have low reliability in capturing the true effect of director resignation on board independence. I find that 67% of the events lead to a decrease or no change in board independence following outsider resignation. Gray and inside director resignations lead to increased board independence for 63% and 80% of the firms respectively.

Table 10
Robustness Tests.

This Table summarizes the tests conducted to check the robustness of the multivariate regression results reported in Table 7, 8 and 9.

Panel A: *Robustness Checks for the Dependent Variable*
1.   CAR calculated using (-1,0), and (0,+1) windows
2.   Using market adjusted returns in place of market model CAR
3.   CARs calculated using CRSP equally-weighted index as benchmark
4.   Market model parameters are calculated using 150 trading-days data prior to the event.
Panel B: Robustness Checks for the Independent Variables
5.   Corporate Governance Index constructed using different sets of variables
6.   Other variables considered:
• Age of the outgoing director
• Term of the outgoing director
• Industry adjusted ROA
• Different specifications for Governance Index
• Gompers, Ishi, and Matrick's (2003) governance index
Panel C: Robustness Checks for the Regression Methodology
7.   Divide sample by comparing firm M/B with median M/B of entire Compustat
8.   Divide sample by time period (1990-1997), and (1998-2000)
9.   Test for heteroscedasticity in the data
10. Windsorize CAR data at first percentile and 99th percentile to control for outliers.

The robustness of the above reported results is checked and the list of robustness tests conducted is reported in Table 10. The results are robust to different model specifications for calculation of *CARs,* and different benchmarks used. I also test for the effect of outgoing director's age and her office term on *CAR*, the regression coefficients on these variables is insignificant. Furthermore, the inclusion of these variables has no impact on regression results. Industry adjusted ROA behave in similar fashion as industry adjusted ROE. As discussed earlier, I do not use Gompers, Ishi and Matrick (2003) governance index because only 79 firms from my sample are common with their dataset. I also divide sample in different ways, but there is no significant impact on the results.

4.4 Summary

The evidence presented in this study suggests that investors consider board independence an important aspect of a firm's governance. Nevertheless, board independence is not the only mechanism that is employed to reduce agency problems. Other mechanisms like insider ownership, non-affiliated blockownership, top managers' compensation, etc., may also provide a resolution to the agency problem. These mechanisms may work independently or in combination with each other. The results of my study suggest that to some extent a loss of board independence may be compensated for by employing other mechanisms like insider ownership and non-affiliated blockownership. Incentive compensation, though providing an alignment of incentives between CEOs and shareholders, may itself exacerbate agency problems if the high

levels of stock based compensation induce managers to commit accounting fraud. In that case independent boards may provide important oversight.

These results provide important implications for current changes in the regulatory environment. The NYSE and Nasdaq recently changed their listing requirements. Listed firms are required to have a majority of independent directors. Exceptions to this rule are available to closely held firms, suggesting that high managerial ownership may substitute for board independence in improving corporate governance. My results are in agreement with their notion of substitution between board independence and high insider ownership. Furthermore, this study identifies other governance mechanisms that can resolve agency problem in the absence of an independent board. The regulatory agencies may thus consider providing more exceptions to the requirement of board independence.

CHAPTER V

CONCLUSION

Agency problems arise when the owners (shareholders) of the firm give control to agents (managers) to work in their interests. The agents may look after their own interests, and thus deviate from shareholder value maximization. This deviation between the goals of managers and shareholders may lead to losses in firm value. Several corporate governance mechanisms have been suggested to reduce agency problems. Some of these mechanisms are external to the firm, like external capital markets, the managerial labor market, etc., while others are internal to the firm, such as monitoring by the board of directors, separation of the CEO and Chairman positions, and levels of debt in the capital structure.

Most financial researchers agree that board independence is an important constituent of firm's governance. However, much of the empirical research has found mixed evidence on the impact of board independence on firm performance. Some of the confounding evidence on the importance of board independence may be because of substitutions and interactions among various governance mechanisms. As evident from regulatory changes, large and influential entities such as the SEC imply that board independence is desirable. Therefore, it is crucial that there be more and better evidence regarding the importance of board independence itself and as it relates to other governance mechanisms in providing effective corporate governance.

I study the importance of board independence from the viewpoint of investors. An independent board, as vital as it may be, is only one of the many mechanisms employed by the firms to control agency cost. The significance of board independence may thus depend upon the strengths of other existing governance mechanisms. I examine the importance of board independence as perceived by investors conditional upon the existing governance structure and the firm's business environment.

In particular, I examine the market reaction to board member resignation announcements and its relation with existing governance structures and business environments. This approach allows me to analyze whether or not shareholders consider board independence to be an important facet of firm governance, and under what conditions board independence may be desirable. Specifically, I measure the market reaction to abrupt changes in board structure that occur due to director resignations. I then classify the outgoing director as insider, gray, or outsider depending on his/her affiliation with the firm. The governance mechanisms that can potentially substitute for board independence are then identified by regressing the market reaction to director resignation on other mechanisms. This approach is based on the premise that investors will be less concerned over a loss in board independence when the firm has other potentially effective governance mechanisms in place.

My study reveals that investors are concerned over losses in board independence. Firms experiencing outside director resignations lose much more of their market value at the time of the resignation announcement than firms experiencing inside or gray director resignations. I further investigate the variation in investor reaction to director

resignations by examining the relation between announcement period returns and the strengths of other governance mechanisms. I find that investors react more negatively to outside director resignations when the strength of other mechanisms, as captured by a corporate governance index, is low. When individual mechanisms are considered, officer and director ownership and non-affiliated block ownership are found to be possible substitutes for board independence. Additionally, I find that the market reaction to a loss in board independence is more negative for firms with higher incentive compensation of their CEOs.

This study presents an important piece of evidence suggesting that investors consider board independence an important aspect of firm's governance. Yet, board independence is not the only mechanism that is employed to reduce agency problems. As suggested in the literature, other mechanisms like managerial ownership, blockholder ownership, top managers' compensation, etc., may also work independently or in combination with each other to mitigate the agency problems of equity. The results of my study suggest that the loss in board independence may be compensated for by employing other mechanisms like insider ownership and non-affiliated blockholder ownership. Incentive compensation, though it may provide alignment of incentives between CEOs and shareholders, may itself increase agency problems if the high levels of stock-based compensation induce managers to commit accounting fraud. In that case independent board may provide important oversight.

These results also have important implications for the recent changes in the regulatory environment. Major stock exchanges like the NYSE and Nasdaq lately have

changed their listing requirements. These changes have been accepted by the SEC and listed firms are now required to have a majority of independent directors. Firms with a majority of stocks held by managers are allowed an exception to this rule. This exception to listing requirement suggests that market regulators consider high managerial ownership as a substitute for board independence in improving corporate governance. My results are in agreement with their notion of substitution between board independence and high insider ownership. Furthermore, this study identifies other governance mechanisms that may help resolve agency problems in the absence of an independent board. In particular, I find that high non-affiliated block ownership may also provide an effective alternative to board independence. The regulatory agencies may thus consider providing more exceptions to the requirement of board independence.

Like any other empirical study this study also has its own limitations. The conclusions regarding the empirical findings are based on the assumption that outsider resignation always leads to a loss in board independence. This assumption may be violated in cases there the outsider is immediately replaced by another outsider. I address this issue by examining board structures from proxy statements available after the resignation announcements. These proxy statements are available on average 207 days after the resignation announcements, and thus are not a reliable source of information for the impact of director resignations on board independence. Another way of handing this issue is to look for director appointment announcements. However, director appointments may not always be publicly announced. The other limitation of this study is that the sample is biased toward those firms that are more closely tracked by

news media. News media may cover large firms more than small firms. In that case the findings of this study may not be applicable to smaller firms.

I use information from proxy statements to classify directors as insider, gray, or outsider. This information is disclosed by the firm, and therefore may not be accurate if managers unintentionally or intentionally hide the true relation between the directors and the firm. This problem is more pronounced in the case of outside versus gray director classification.

A natural extension of this dissertation is to study the long-term impact of changes in board structure on firm performance. Event study methodology captures only short-term impacts that may differ in cases where managers take their cues from investor reactions and change their policies. Similar experiments can also be designed to study the impact of changes in other governance characteristics like ownership patterns on firm value, while controlling for the existence of other governance mechanisms.

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