TWO ESSAYS ON CEO COMPENSATION AND TURNOVERS

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ABSTRACT

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This study contains two chapters with respect to CEO compensation and CEO turnovers. Recent regulation of Sarbanes-Oxley Act (SOX) stresses the need for more financial experts on boards. Among other types of financial experts on the board, commercial bankers receive particular attention because of conflict of interest would be most severe compared to other types of independent board of directors (Jensen and Meckling, 1976; Krozner and Strahan, 2001). As regards, in the first chapter, we try to examine whether banker directors are working for the best interest of shareholders or not by examining the CEO compensation and CEO turnovers. Generally, we find that firms with banker directors are more likely to fire CEOs and decrease CEO equity compensation when firm performance is poor. In fact, such CEO dismissal decisions by banker-director-firms are perceived positively by the stock market. In the meantime, firms with more affiliated bankers on the board show stronger sensitiveness to firm's risk and act accordingly in terms of CEO dismissal and CEO compensation decisions. Moreover, I find no direct evidence that risk-averse decision on CEO dismissals by firms with banker directors create positive stock market response, supporting conflict of interest hypothesis. Consistent with prior research, bankers' appointment to the board in firms facing high credit risk or weak cash flow problems are welcomed by the stock market.

In the second chapter, we examine whether CEO turnover decisions become more short-term oriented when stock market becomes more liquid. Previous research claim that better liquidity would improve market efficiency by better impounding the information about long-term projects, such as R&D investments, and make the CEO turnover more long-term oriented. Another strand of literature asserts that better liquidity would give transient institutional investors (Bushee, 1998) increased flexibility to unwind their position, creating more positive feed-back trading, and make the CEO dismissal more short-term oriented. Using data on CEO turnover of Execucomp firms from 1993 to 2009, we find that the implicit incentive of CEO dismissal is more (less) sensitive to the annual EPS being negative for the companies with high transient (dedicated) institutional ownership under better stock liquidity, which is proxied by either "after decimalization" of year 2001 or lower Amihud (2002) illiquidity measure. Moreover, after decimalization, firms that dismiss their CEOs under the pressure of transient institutions are more likely to reduce their R&D investments after the CEO dismissal. Our event study reveals that stock market investors see through and respond negatively to short-termism-driven CEO turnover.

To my parents, who have been there for me from day one. Thank you for all the love, support, dedication and always believing in me throughout my entire life.

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CHAPTER 1

INTRODUCTION

A chief executive officer (CEO) is an officer who has the highest ranking in a firm and is responsible for total management of the firm. As regards, when an individual is appointed as a CEO of a public corporation, they should put their utmost effort to maximize shareholder value. Since there are incentives to diverge from shareholders' interests, CEOs are monitored by board of directors and institutional investors constantly. Board of directors are members who guide and control firm's affairs and are thus considered important part of corporate governance structure (Fama and Jensen, 1983). The boards of directors have a fiduciary duty to serve for shareholders' interests and they should be the one who defends against poorly performing management. On the other hand, institutional investors are organizations that invest largely on one firm's stocks. They thus have the most incentive to monitor management, spend costly efforts to gather information about the company and engage actively in corporate major decisions. Moreover, they can actively influence corporate governance with voting rights or with buying and selling shares extensively (see Maug, 1998; Harris and Raviv, 2010; Admati and Pfleiderer, 2008; Edmans, 2009; Edmans and Manso, 2010). In fact, prior research finds supporting evidence that institutional investors monitor CEOs to mitigate agency conflicts between shareholders and managers (Hartzell and Starks, 2003).

With this respect, the role of board of directors and that of institutional investors are considered one of the most important internal and external mechanisms to control CEO's behavior as CEO has an incentive to diverge from shareholders' interests when not monitored. They are widely believed to play an important role in monitoring top management.

However, which type of board of directors or institutional investors are involved in company's corporate governance is a crucial factor in determining the quality or the level of corporate governance. For example, Wesibach (1998) finds that firms with more outside directors are more likely to fire a CEO based on firm's performance compared to firms with more insider-dominated boards. Adams and Ferreira (2009) find that CEO turnover is more likely when firm performance is poor with more female directors on the board. On the other hand, Bushee (1998) finds that "transient" institutional investors, who hold more diversified portfolios with short-term holding periods and with a momentum trading strategies, are the major driving force of managerial myopia. He finds that firms with high ownership by transient institutions are more likely to cut long-term R&D investment to meet the short-term analysts' expectations. Also, prior research on institutional investors find that such large shareholders try to control over corporate decisions by either using their "voice" (see Maug, 1998; Harris and Raviv, 2010) or through "exit" behavior (see Admati and Pfleiderer, 2008; Edmans, 2009; Edmans and Manso, 2010).

As regards, this dissertation examines the role of board of directors' (Chapter 2) and institutional investors' (Chapter 3) effect on two incentives that exerts Chief Executive Officer (CEO)'s effort to maximize shareholder value: 1) the implicit incentive – CEO turnover and 2) the explicit incentive – CEO compensation. Gibbons and Murphy (1992), Jensen and Murphy (1990), Holmstrom (1999) as well as Kwon (2005) state the threat of dismissal is an implicit

incentive and CEO compensation is an explicit incentive. Studying two types of CEO incentives to put their utmost effort towards value maximization provides a natural setting to examine whether such control mechanisms by different types of board of directors or institutional investors are providing better quality corporate governance or not. This dissertation examines CEO turnover and CEO compensation of S&P 1500 firms over 1997-2008 period for chapter 2 and CEO turnover that happened between 1992 – 2008 for chapter 3.

Particularly, Chapter 2 examines the commercial bankers' effect on CEO turnover and CEO compensation when they sit as board of directors. Commercial bankers receive particular attention because they are faced with potential conflict of interests as shareholders and as lenders, and hence it is important to see if the financial expertise and benefit the bankers bring to the firm and if not how they are reacting differently from other types of board of directors. Moreover, recent regulation of Sarbanes-Oxley Act (SOX) stresses the need for more financial experts on the board, with the assumption that financial experts such as commercial bankers would bring positive influence to firm's corporate governance. However, academic literature on commercial bankers' role as board of directors show inconsistencies on their effectiveness on monitoring role and whether they are working in the best interest of shareholders.

This second chapter adds to the literature that different types of board of directors bring in different influences on deciding CEO removals and CEO pay. Specifically, this chapter extends the work by Krozner and Strahan (2001) that commercial bankers face conflicts of interest when they sit as board of directors. We extend the analysis by splitting the commercial bankers into affiliated bankers and non-affiliated bankers and claim that affiliated bankers have the most incentive to monitor due to their employers' lending relationship with the firm but at the same time face the most conflict of interest as lenders when firm's risk increases.

In the meantime, Chapter 3 examines the effect of different types of institutional investors on CEO turnover. In fact, Shleifer and Vishny (1986) suggest that large blockholders' role is important in monitoring top managers and McConnell and Servaes (1990) find that higher the institutional ownership, higher the firm value, attributing such findings to improved corporate governance. However, institutional investors are not homogeneous in terms of their investment horizon and characteristics and such differences in characteristics may affect the effectiveness on corporate governance. Impatient investors would respond to short-term performance of the firm while dedicated investors would spend costly effort to gather information about the company. As regards, this third chapter examines whether different types of institutional investors influence corporate governance differently by looking at the CEO turnover probability and using the exogenous shock in the stock market liquidity.

With enhanced stock market liquidity, aforementioned heterogeneity in institutional investors' characteristics would become more prominent. That is, higher liquidity would lead more impatient investors to easily sell off their shares based on myopic decisions with less cost involved in exiting, while at the same time, dedicated institutional investors would form more easily with enhanced liquidity in the stock market.

This chapter extends prior research on institutional investors' impact on corporate governance. Mostly, this chapter extends the work by Helwege, Intintoli, and Zhang (2012), which the authors examined how institutional investors' influenced forced CEO turnover over time in their paper. We extend the analysis by observing different types of institutional investors' effect when stock market liquidity has improved in the context of CEO turnover. Specifically, this chapter's research question is: "are CEOs fired more or less sensitively to short-term oriented performance measure when the stock market is more liquid?"

Moreover, this third chapter adds to the literature by testing directly previous literature's main assumption. It was assumed that the implicit incentive of threat of dismissal would be short-term oriented : "transient investors create implicit incentives for CEOs to over-allocate effort toward improving current earnings, potentially at the expense of creating long-term value" (see Dikoli, Kulp, and Sedatole; 2009).

All in all, evidence on such aforementioned issue of commercial banker director's effect and/or different types of institutional investors' influence on firm's corporate governance is important and is observed in this dissertation. This dissertation provides insights on corporate governance quality depending on the types of board of directors or institutional investors and complement prior corporate governance literature, particularly the literature related with CEO turnover and CEO compensation.

CHAPTER 2

CEO COMPENSATION AND CEO TURNOVERS WITH BANKERS ON THE BOARD

2.1 Introduction

Agency theory argues that board of directors should play a key role in monitoring and controlling CEO's behavior to act in the interest of shareholders (Fama and Jensen, 1983; Jensen, 1993). However, board of directors may not always act in line with shareholders' interests (Bebchuk and Fried, 2003). In fact, U.S nonshareholder constituency statutes allow directors to consider effects on non-shareholder stakeholders when making board decisions (Adams and Ferreira, 2007). Hence, there is a possibility that boards' preferences may diverge from those of shareholders. Nevertheless, board of directors with financial expertise are believed to enhance corporate governance, as evidenced by recent regulation of Sarbanes-Oxley Act (SOX) stressing the need for more financial experts on boards.[1]

Among the many different backgrounds of board of directors, commercial banker director deserves special attention due to potential conflict of interests between shareholders and debtholders. (Henceforth in our paper, we will refer commercial bankers as "bankers" for

[1] See section 407 of Sarbanes-Oxley Act, which includes the definition of financial experts in audit committee.

simplicity.) When bankers sit on boards, they have a fiduciary duty to serve for shareholders' interests while banker director's interest may diverge from shareholders' interests due to bankers' role as a (potential) lender. Prior evidence shows inconsistencies on the effectiveness of banker directors' role to the firm. As regards, we would like to know their effectiveness on monitoring role, whether they truly act in the best interests of shareholders or whether they oftentimes act like a creditor. As can be seen in Table 2.1 of our sample distribution, there are about 9.5% of S&P 1500 companies who have at least one banker director on their boards between 1999 and 2008.[2]

In this paper, we analyze one of the main role that board of directors do – monitoring and controlling the managers. By studying CEO turnovers and executive compensation, we try to examine whether banker directors influence corporate governance in line with shareholders' interests, and if not, how they act differently from others. Our main hypothesis is that the financial expertise of the banker directors positively affects CEO incentives to be more performance sensitive. On the other hand, we also hypothesize that when bankers sit on the board, conflict of interest between creditors and shareholders arises as risk increases (Krozner and Strahan, 2001). Particularly, this paper tries to discuss the following key questions: Do the banker directors fire CEOs appropriately and possibly more sensitively to firm performance compared to non-banker independent directors? Do the stock market perceive positively to the forced turnover announcement news especially when banker is sitting on the board? If so, when is the effect more pertinent? After the turnover, does firm performance improve accordingly? Is

[2] Krozner and Strahan (2001) show 31.6% of U.S Forbes 500 firms had bankers on the board in 1992 and Byrd and Mizruchi (2005) show 34% of Fortune 500 firms in fiscal year 1980 have at least one banker (either a lender or a non-lender) on the board. However, with data extended, Hilscher and Sisli-Ciamarra (2011) shows that 11.4% of S&P 500 companies had a creditor on the boards between 2002 and 2007.

there any significant difference in post-performance depending on the existence of banker on the board? Is there a difference in CEO pay when there are banker directors? Do banker-directors link CEO pay more tightly to firm performance or firm risk than other non-banker directors? What is the announcement effect of banker-director appointment?

With respect to CEO dismissal decisions, we find that banker directors, especially the affiliated ones, are generally performance sensitive. Moreover, we find that stock market reacts favorably to forced CEO turnover announcement when banker directors are present. This finding implies that banker directors' decision on firing a CEO is not value destroying to shareholders and is actually seen as a positive decision in terms of shareholders' interest. This positive stock market reaction to forced CEO turnover news is particularly true when performance is poor prior year to the CEO turnover with banker directors' presence on board. If performance was poor prior year with banker directors on the board, forced turnover announcement is perceived to be more positive. Besides, firm's post performance after the CEO turnover increases as there are more commercial bankers on the board and the result is stronger when firm was experiencing poor accounting performance or when firm's risk was high prior year to the CEO turnover. This result suggests that bankers' existence on board helps firm to revive faster than for firms without bankers, possibly by providing appropriate financial advice and monitoring.

In the meantime, affiliated bankers are sensitive to risk measure as well when deciding on CEO's dismissal unlike other independent directors. Such risk-sensitive driven forced CEO turnover announcement news is not perceived as positively by shareholders for firms with banker directors on the board. This may imply that banker directors' firing decision rule based on firm's risk is not value-enhancing for shareholders' perspective. In other words, banker's effort to

reduce downside risk by removing CEOs when firm's risk is high is not perceived positively by the shareholders.

With respect to CEO compensation decisions, we find that when firm performance deteriorates banker directors discipline CEOs by reducing their equity compensation accordingly. Particularly, we find that affiliated banker directors are sensitive to firms' riskiness and cut CEO compensation accordingly. Risk sensitiveness to CEO pay holds for both equity and cash compensation, indicating that affiliated bankers are very concerned with firms' volatility.

In conclusion, our paper suggests that banker director's monitoring role on CEOs' behavior is tougher than other non-banker directors but may be aggressive in terms of risk as well. In fact, banker's appointment on board is seen favorably for firms who are experiencing cash flow problems or who have high credit risk, as shown from the result of banker directors' appointment announcement effect. Particularly, the affiliated banker's appointment to the board is more favorable when firm experienced an inferior stock performance during prior year. This stock market reaction may indicate that bankers are needed and welcomed by those weak cash flow firms or high risk firms because they are expected to provide benefits with their financial expertise and perhaps enhanced monitoring.

Our paper extends Krozner and Strahan (2001) and Hilscher and Sisli-Ciamarra (2011) with respect to conflict of interest that bankers face when sitting as directors. Our study is different from prior studies in that we use S&P 1500 firms while most of prior studies uses data on S&P 500 firms. Not only that, Guner, Malmendier, and Tate (2008) look at both investment banker directors and commercial banker directors with respect to investment-cash flow sensitivity and loan amounts, while our paper focus on explicit and implicit incentives for CEOs to exert their best effort. Moreover, Guner, Malmendier and Tate (2008) find that commercial bankers have

insignificant effect on deciding CEO compensation and we find similar results in general. However, we extend this analysis and split the commercial bankers into affiliated bankers and nonaffiliated bankers and find that affiliated bankers do have significant effect on CEO compensation decision in accordance with firm's performance as well as firm's riskiness.

This paper extends aforementioned literature by providing evidence on banker directors' monitoring effectiveness when deciding on CEO dismissal or CEO compensation with respect to firm's performance. What is more interesting is that we find results that bankers, especially the affiliated ones, are sensitive to risk measures and acts conservative about firm's risk. This finding extends Mitcehll and Walker (2010) findings that affiliated bankers are concerned about firm's distress. Moreover, we provide direct evidence that bankers are welcomed by the stock market when they are appointed as board of directors for firms with high credit risk or cash flow problems.

Our paper is organized as follows. Literature review and hypotheses are developed in Section 2.2. Section 2.3 describes the data and estimation method. Section 2.4 presents estimation results, and Section 2.5 provides robustness check results and addresses endogeneity concerns. Section 2.6 concludes.

2.2 Literature review & hypotheses development

In this section, we summarize literature relevant to banker directors' effectiveness as monitors and formalize our hypotheses based on prior research. As regards, we form eight testable hypotheses of the banker director's monitoring effectiveness and its consequences.

Following prior research, we assume that affiliated banker directors have more incentives to monitor due to their employers' lending relationships with firms.[3]

2.2.1 Bankers on boards

According to Krozner and Strahan (2001), having a commercial banker on the board brings unique advantages to firm value. For example, as the authors cite, with close bank relationship via board representation, information flow can be enhanced and information asymmetries can be reduced (Diamond, 1991). Moreover, with bankers on the board, it could be beneficial to the firm since the bankers can provide industry-specific knowledge and enhanced monitoring (Diamond, 1984), provide expertise to management, lower cost of funds via enhanced information flow through close bank relationship, and/or firm can get better financing from the banker director's bank. Also banker directors' existence can be signaled to the market that the firm is unlikely to experience financial distress due to the certification role provided by the banker joining the board (Fama, 1985). Such beneficial relationship, although, come at a cost: banker-directors may use this private information to extract rents and lead to information-based monopoly, as Rajan (1992) claims.

Empirically, Sisli-Ciamarra (2006) shows that cost of borrowing is reduced via better monitoring when affiliated banker is present on the board. Moreover, Dittman et al. (2010) find

[3] Mitchell and Walker (2010) assume that affiliated bankers have more incentives to monitor due to their lending relationship. Sisli-Ciamarra (2006) shows that cost of borrowing is reduced via better monitoring when affiliated banker is present on the board.

that bankers on German firm's boards help overcome financing restrictions.[4] Lai and Tsai (2010) find that firms with banker on the board can obtain relatively better loan terms and can get lower loan spread rates. Moreover, Booth and Deli (1999) find that commercial bankers provide bank debt market expertise to the firms they sit as board of directors by lending more bank debt. Krozner and Strahan (2001) and Byrd and Mizruchi (2005) find stronger evidence of banker's monitoring when bankers sit on firms' boards.

However, such benefits of having bankers on the boards can be offset by the costs of potential conflict of interest. Bankers could be possibly sitting on the board just for their own bank's benefits and not for the firm's shareholders. Moreover, prior research suggests that creditors have different incentives than those of shareholders (e.g. Nini, Smith, and Sufi, 2009). The primary interest of (potential) lender is to minimize the downside risk of the borrower, whereas equityholders' interest is to maximize the upward potential even at the expense of bondholders by taking risky projects (Jensen and Meckling, 1976). In addition, as noted by Krozner and Strahan (2001), bankers in the U.S. face two legal doctrines that raises the costs of bankers to sit on those firms that are in most need of their financial expertise and beneficial close bank relationship via directorship. Such doctrines are equitable subordination and lender liability.

In fact, Mitchell and Walker (2010) find that bankers are less likely to sit in small firms and financially distressed firms. Dittman et al. (2010)'s results suggest that bankers participate on non-financial firm's boards because it is beneficial for them, while the banker's existence on board is potentially harmful for the firms. They find little evidence that banker-directors provide effective monitoring and in fact cause a decline in firm value and deterioration in firm performance after the banker's appointment to the board. Also, Guner, Malmendier, and Tate

[4] Dittman et al. (2010) paper looks at German firms from 1994 to 2005.

(2008) find that firms with commercial banker directors are associated with less investment-cash flow sensitivity and obtain additional lending but those loans are to firms that are least financially constrained and with worse investment opportunities. As regards, their results suggest that commercial banker directors do not necessarily work to enhance shareholder value and rather the authors suggest that banker-directors' actions appear to benefit their own institutions. In addition, Hilscher and Sisli-Ciamarra (2011) provide evidence that conflict of interest is severe in the case of acquisition decisions, transferring wealth from shareholders to creditors. Specifically, they document that affiliated banker's presence is associated with less favorable stock market reactions, more favorable credit market reactions, less favorable acquisition outcomes for shareholders. Also Hagendoff and Keasey (2012) find that firms that have board of directors with financial background do not significantly gain from bank acquisitions. However, Mitchell and Walker (2010) find little evidence that affiliated bankers work only for the employer's benefits rather than that of shareholders.

2.2.2 CEO turnover and board structure

The threat of dismissal is an implicit incentive to enhance CEOs productivity. (Jensen and Murphy, 1990). As regards, in order to see whether a board with banker is performing its monitoring role effectively, we first examine the relation between banker directors' existence and sensitivity of forced CEO turnover to firm performance and firms' risk.

One of the main decisions that a board performs is to replace a poorly performing CEOs. Taylor (2010) shows that there are more costs involved to board of directors when firing a CEO

compared to the costs to the shareholders. As regards, the board does not fire CEOs as much as the shareholders would like it to be. In spite of that, Huson et al. (2001) shows that stock price reactions were positive for 127 forced turnover announcements that occurred between 1971 and 1994, indicating that shareholders usually perceive forced turnovers as favorable decision to their interests. On the other hand, Khanna and Poulsen (1995) find a significant negative response to forced CEO turnover for distressed firms that scapegoat the CEOs. Hermalin and Weisbach (1998) predict that CEO dismissals would receive a negative investor response if the CEO was fired based on private information.

Previous research suggests that effective boards show higher sensitivity to performance when firing a CEO. For example, Weisbach (1988) finds that firms with outsider-dominated boards fire CEO more in accordance with poor firm performance compared to firms with insider-dominated boards. Agrawal and Nasser (2010) show that CEO turnover-performance sensitivity is higher for firms with independent director who is a blockholder (IDB). Bushman et al. (2010) find empirically that higher the volatility of CEO talent, measured by idiosyncratic volatility, higher the probability that a CEO is forced out, while higher the risk unrelated to CEO talent, lower the forced turnover probability. Also, the authors mention in their untabulated analyses that CEO forced turnover becomes more sensitive to idiosyncratic volatility as there are more outside directors on the board. Dahya et al (2002) show that CEO turnover-performance sensitivity became stronger after the issuance of *Code of Best Practice* of U.K. firms and the increased sensitivity was particularly concentrated among firms that actually adopted the *Code*.[5]

[5] *Code of Best Practice* was issued by the Cadbury Committee in 1992, recommending that U.K. corporations' boards to include at least three outside directors and to separate CEO and board of chairman (See Dayha et al., 2002).

On the other hand, larger boards and/or boards where CEO holds the position as chairman of the board (Fama and Jensen, 1983) are considered weak boards. Firms with such boards were shown empirically that CEO turnover-performance sensitivity was lower, indicating that such boards lack independent leadership resulting in less monitoring of top management (see Goyal and Park, 2001).

Hypotheses with respect to CEO turnover: According to Hermalin and Weisbach (2001) and aforementioned previous research, when the board is effective, CEO turnover should be more sensitive to performance. As regards, if commercial bankers do effectively work as monitors, then CEO turnover should be more sensitive to firm performance for firms with banker directors compared to those where there is no banker director. In fact, Kang and Shivdasani (1995) find that Japanese firms experience higher nonroutine turnover[6] rate when the firms have ties with a main bank compared to firms without ties. Like prior studies, we assume that affiliated bankers have the immediate incentives to monitor more intensively due to their affiliatedness with the firm. Also, affiliatedness present potential conflict of interest not faced by unaffiliated banker directors.[7] Therefore, we predict the following:

H1) For firms with banker directors on board, forced turnover is more sensitive to firm performance and this effect is particularly true as there are more affiliated bankers on the board.

[6] Nonroutine turnover refers to turnovers where presidents do not remain on the board of directors.

[7] Unaffiliated bankers may be regarded as "potential" lender, introducing potential conflict of interests (Mitchell and Walker, 2010).

Particularly, bankers would be more sensitive to risk measures when deciding on CEOs' dismissal. According to Sarasvathy et al. (1998), bankers are different entrepreneurs in perceiving and managing of risks. The authors find that bankers focus more on controlling risks and try to avoid situations where they may be higher levels of risk. In fact, Mitchell and Walker (2010) find that affiliated bankers appear largely responsible for reductions in distress after their appointments as board of directors.

H2) Unlike other independent directors, banker directors will be sensitive to risk measures when forcing out CEOs. Particularly, the affiliated bankers will be sensitive to firms' risks when deciding on CEO dismissal.

Forced turnover news is perceived as good news by the market when firm performance is poor or for firms with outside directors or with good corporate governance. As regards, if banker directors are better monitors and have dismissed CEOs in the interests of shareholders, stock market would react favorably to the news. Moreover, this effect will be more positive than for firms with no commercial banker directors because of following possible reasons: commercial bankers can provide industry-specific financial expertise that the bankers developed in a particular industry lending relationship, bankers are trained to monitor actively and can make better decisions with private information, or a banker on the board may indicate that the firm is unlikely go into distress ("certification role", Fama, 1985). For such possible reasons, it is likely that stock market expect banker directors would enhance corporate governance and because of such expectations they will react more favorably to the turnover news for firms particularly with

banker directors. In addition, when outside directors fire CEOs in accordance with poor firm performance, stock market perceives as better news. Hence, if banker directors are perceived by the market as better monitors and fired CEOs in accordance with poor firm performance, stock market would react *more* favorably to the news. we therefore formalize H3 and H4 as follows:

H3) When firm announces a CEO turnover, firms with banker director on the board will result in more positive stock market reactions compared to firms with no banker director.

H4) As there are more bankers on the board, forced turnover news is more positive in conjunction with poor prior firm performance.

If boards have dismissed CEO to correct prior poor firm performance (i.e. if our *H4* holds), firm performance should improve after the CEO turnover. In fact, Kang and Shivdasani (1995) find that firm performance is improved after the nonroutine turnovers in Japanese firms.[8] This suggests that if turnover decision was made to enhance firm performance, post-performance should be increased. As regards, if banker director did make a correct, and perhaps a better, decision on firing a CEO in accordance with poor firm performance, firms with banker directors should experience an enhanced firm post-performance after the CEO turnover. Therefore, our H5 is as follows:

H5) After the CEO turnover, firm performance improves more with bankers on the board than with non-banker directors. This enhancement in firm performance will be stronger for

[8] Nonroutine turnover refers to turnovers where presidents do not remain on the board of directors.

firms with banker directors when firm's prior-to-CEO-turnover-year-performance was poor or firm's prior-to-CEO-turnover-year-risk was high.

2.2.3 CEO compensation

According to the "managerial power approach" mentioned by Bebchuk and Fried (2003), executive compensation is a potential instrument to solve for agency problem but at the same time is also partly viewed as an agency problem itself. That is, some of the pay structure is affected by rent-seeking CEO behaviors. In fact, Bertran and Mullainathan (2001) find that CEOs are paid for luck, which is beyond CEO's ability, indicating that CEOs have ability to extract rents via CEO compensation. As regards, the authors find that for firms with better governance system, such as firms with large shareholders, small board size, or more outsider-directors, they pay CEOs less for luck.

Studies on the effect of board structure on CEO compensation generally show that executive compensation variation is explained by the board structure. For example, Core et al. (1999) find that weak corporate governance characteristics (e.g. CEO duality, board size) of a firm is positively associated with CEO compensation, indicating that CEO may be able to receive more compensation from the weak board. In other words, CEO compensation is generally higher for firms with large board size, more interlocked board of directors, and where CEO is also a board chair.[9] Chhaochharia and Grinstein (2009) find that complying to the board-independence-

[9] However, the authors do not provide support for the claim that outside directors are better monitors than internal directors. Moreover, the authors only provide insights with regard to total, cash, and salary compensation.

regulation of previously noncompliant firms was associated with a decrease in the bonus and stock-based CEO compensation. This finding indicates that independent boards have stronger power than the CEOs, at least in compensation scheme, and that such strong boards pay out less to the CEOs in bonus- and stock-compensation. Agrawal and Nasser (2010) find that firms with independent director who is a blockholder (IDB) pays out less cash and total compensation to the CEOs and pays lower proportions of equity pay. Moreover, Chang et al. (2009) find that firms with high financial distress risk pays new CEOs with fewer equity-based incentives compared to new CEOs in low financial distress risk firms.

Hypotheses with respect to CEO compensation: Overall, previous research suggests that stronger and possibly effective boards pay out less compensation to the CEOs limiting CEOs ability to extract rents (see Core et al, 1999; Agrawal and Nasser, 2010; and Chhaochharia and Grinstein, 2009). As regards, if the banker sits on the board and performs effective monitoring, less CEO compensation will be paid out. Moreover, shareholder-bondholder conflicts of interest can be mitigated by paying CEOs with fewer equity-based compensation, particularly when financial distress risk is high. Therefore, we formalize our predictions about the effect of CBDs presence on CEO compensation as hypotheses H6 and H7:

H6) With banker on the board, CEO compensation, particularly equity compensation, would be paid out less on average.

H7) If prior year's firm performance is not good, then CEO compensation would be affected in a negative way with CBD's existence. This effect will be particularly pronounced for equity compensation.

2.2.4 Director's appointment

Dahya and McConnell (2005) find that boards with more outside directors are expected by the investors that they make different and perhaps better board decisions on CEO appointments.[10] Moreover, due to the certification role that the bankers can signal to the market, risky or small firms have the greatest benefits of having a banker on their boards. (see Diamond, 1984; Krzozner and Strahan, 2001)

Hypotheses with respect to banker-directors appointment : As regards, if banker directors are expected to make better board decisions due to aforementioned benefits to the firms or effective monitoring activities (that we will test in this paper), it should create a positive stock market reaction to the commercial banker director's appointment news. Particularly, shareholders would respond positively at the news for risky or small firms. On the other hand, if shareholders believe that commercial banker director would be detrimental to them as found in Dittman et al. (2010), Guner et al (2008), or Hilscher and Sisli-Ciamarra (2011), announcement of CBD's appointment would result in negative stock reaction. This is where H8 and H9 take effect:

H8) When banker is appointed as board of directors, stock market would react positively to the announcement in anticipation of different and perhaps better board decisions.

[10] Dahya and McConnell (2005) examine UK boards between 1989 and 1999.

H9: This banker director's appointment news is particularly positive news when risky or small firms appoint bankers as their board of directors.

2.3 Data and Empirical Methods

2.3.1 Data

The paper uses information on directors and boards obtained from BoardEx, a database that contains information about more than 300,000 unique board members of publicly listed companies in the United States and the world. The data is cut as of May 2009. The database provides limited one-to-one link information to 8,622 unique firms in Compustat via CIK. However, we find that multiple company ID's in BoardEx, most of which are omitted in the link information, should be actually matched with the same company in Compustat. The reason is because the BoarEx ID differs depending on the unique spelling of the name of the company that each director claims. Therefore, we run extensive text matching algorithm (using compged function of SAS) and obtain exhaustive link to 27,034 unique firms (GVKEY's) in Compustat. To obtain the information about whether a director works (has worked) for a commercial bank, we use the names of all the banks in the Bank Regulatory Database, the Commercial Bank Database, the Bank Holding Companies Database of FRB Chicago (WRDS) for text matching algorithm. We also use the name of the banks shown in LPC Dealscan Database with positive loan amounts. We also use the name of the firms in Compustat whose Fama-French 49 industry group identifies as commercial banks. We also manually check whether identified bank is a bank

holding company or not by using the bank holding company information in FDIC website. To make sure that we are not confusing between investment banks and commercial banks, we use the ranking chart of investment banks in IPO by Jay Ritter. We follow Guner, Malmendier, and Tate (2008) in defining affiliated commercial banker as the director who works for a bank that had a loan exposure to the monitored company at least one point in time in its history.

CEO compensation data are from Execucomp data set, which provides executive compensation data of S&P1500 + companies in the U.S. CEO turnover data on and before 2001 has been provided by Dirk Jenter, which the data was used in Jenter and Kanaan (2008). CEO turnover data from year 2002 to 2008, we hand collect them in a manner consistent with Jenter and Kanaan (2008) by investigating any name changes of the person with the annual CEO title in the Execucomp data set. CEO turnovers of Execucomp firms in 2009 are augmented by the Liberum Research database, which collects information about executives' and board members' turnovers and promotions of all U.S. public firms in real-time basis since 2004. Most of CEO characteristics such as CEO age or CEO tenure are obtained from Execucomp, but if an observation is missing we fill it manually by reading news article obtained from Factiva. For firm characteristic variables such as stock returns or return on assets, we use CRSP and Compustat.

In order to identify whether a CEO turnover was forced or voluntary, we follow Parrino (1997) method using Factiva, a commonly used method in the CEO turnover literature (see Bushman et al., 2010; Jenter and Kanaan, 2008; Kaplan and Minton, 2008; Parrino et al., 2003; Taylor, 2010). Most prior research look at the forced turnovers since it has more interesting stories than voluntary turnovers. For example, Huson et al. (2001) finds that forced turnovers are negatively related to the performance measures while voluntary turnover and performance shows

no significant relationship. Voluntary turnovers produce mixed results or sometimes insignificant results due to various unobservable reasons behind the turnover. As regards, our paper, along with the extant literature, will focus on the forced turnover of a CEO.

KMV Expected Default Frequency is a credit measure, measuring the default probability during the forthcoming year. We obtained the data from Moody's KMV.

Sample distribution of firm-years of all firms and of firms with at least one commercial banker director is shown in Table 2.1. Approximately 9.5% of all firm-years in our sample have at least one commercial banker sitting on their boards.

2.3.2 Summary statistics

Summary statistics are shown in Table 2.2. Test of difference shows that banker directors seem to sit in large firms, firms with less cash flow, firms with less growth opportunities as proxied by book-to-market ratio, and less risky firms as proxied by idiosyncractic volatility, standard deviation of daily stock returns and standard deviation of quarterly ROA. This is consistent with Krozner and Strahan (2001) and Mitchell and Walker (2010) that bankers tend to sit on boards that are of less risky but are less in need of bankers. Also, banker directors seem to sit in boards of firms with weak governance; i.e. boards that tend to have more CEOs who are also chairman, firms with less CEO ownership and where institutional ownership is lower, and where board size is larger. Besides, firms with banker directors generally have lower CEO compensation.

2.4 Empirical results

In all multivariate analyses in this section, to proxy firm's performance we use four different performance measures, which are 1 year excess stock return, industry median adjusted ROA, industry median adjusted cash flow, and negative net income dummy. 1 year excess stock return is calculated by annualizing 12 months of monthly stock returns and subtracting the CRSP value-weighted index. Industry median adjusted ROA is calculated by dividing OIBDP by AT of Funda table from Compustat data and industry median is subtracted. Industry is classified using Fama-French 49 industry classifications using the current SIC code.[11] Cash flow is calculated by adding IB and DP variable and then dividing it by 1 year lagged PPENT variable; all variables are from Compustat data. Lastly, negative net income dummy is an indicator variable taking a value of one when net income is negative.

To proxy for firm's riskiness, we use four different risk measures: stock return risk, ROA risk, idiosyncratic risk, and KMV Expected default risk. Stock return risk is a standard deviation of prior one year of daily stock returns and ROA risk is a standard deviation of prior 5 years of industry median adjusted quarterly ROA, where quarterly ROA is calculated by dividing OIBDPQ by ATQ from Fundq table of Compustat data. Idiosyncratic risk calculation is constructed by retrieving the standard deviation of residual returns after regressing daily stock returns on CRSP value-weighted index (see Bushman et al. (2010)). KMV Expected default risk

[11] For all missing SIC codes, the industry is defined as industry 49.

is the KMV Expected default frequency provided by Moody's data, which measures the firm's default probability in the forthcoming year.

Moreover, we follow Adams and Ferreira (2009) with respect to regression formulation in all models controlling for fraction of independent directors and its interaction terms.

2.4.1 Forced turnover regressions

Table 2.3 uses logit model where the dependent variable is an indicator variable taking a value of one when there was a forced turnover and zero otherwise. All specifications in Table 2.3 include year and industry dummies to control for any possible fixed effects. Panel A of Table 2.3 shows the baseline CEO turnover regression analyses without any interaction terms. Generally, Panel A's results show that the having bankers on the board does not have direct significant relationship on the CEO turnover decisions. On the other hand, Table 2.3 Panel B shows the CEO turnover-performance sensitivity analyses to examine H1. Performance measure reported in Table 2.3 Panel B is the industry median adjusted ROA. Columns (3) and (4) show that the interaction of affiliated banker director and industry adjusted ROA has a negative coefficient that is statistically significant at 1% level. Moreover, this interaction term is economically significant: unconditional probability of forced CEO turnover is 2.66%. One standard deviation higher affiliated banker director (1.2%) would predict a 0.49% (= 1.2% * 0.408) lower probability of a CEO dismissal. However, as firm ROA deteriorates by one standard deviation (12.2%) combined with one standard deviation higher affiliated banker director (1.2%), we would see a 0.7% (= 4.789 * 1.2% *12.2%) higher probability of a forced CEO turnover. For outside directors or

nonaffiliated banker directors, the coefficient estimates on the interaction terms show statistical insignificance as well as smaller economic magnitude. Thus, the results show that forced turnover is sensitive to performance measures as the percentage of affiliated banker director increases, while nonaffiliated banker directors appear to be insensitive to firm's performance measure on CEO dismissal decision. In untabulated analysis, we tried negative net income dummy as our performance measure in lieu of industry median adjusted ROA and we found consistent results.

Table 2.3 Panel C shows CEO turnover-risk sensitivity analyses to examine H2. Four different risk measures are used in Panel C. From columns (1) – (4), stock return risk is used, whereas ROA is used in columns (5) – (8), idiosyncratic risk in columns (9) – (12), and KMV EDF in columns (13) – (16). All of the columns' results show that affiliated banker directors are more sensitive to firm's risk when deciding on CEO removal as the interaction coefficient shows statistically significant positive sign. It is interesting to see that CEO turnover is sensitive to risk measure only for the firms with relatively more affiliated banker directors. This effect is economically significant as well: combined with affiliated banker directors' effect, one standard deviation higher risk measure -- 0.014 for stock return risk, 0.019 for ROA risk, 0.012 for idiosyncratic risk, and 2.835 for winsorized KMV EDF -- is associated with 0.35%, 0.63%, 0.62%, and 1.38% higher CEO turnover probability, respectively. Considering the fact that unconditional average CEO turnover probability is 2.66%, this increase in CEO turnover probability is quite economically significant. On the other hand, none of the unaffiliated banker directors are associated with risk measure on deciding CEO dismissals. From this result, we can see that as there are more affiliated bankers sitting on the board, CEO turnover is more likely when firm risk increases. This result implies that CEOs' dismissals are risk-sensitive when

affiliated bankers are on boards, whereas nonaffiliated bankers are not responsive to firm's risk. This is consistent with the view that creditors are risk-averse (Jensen and Meckling, 1976; Sarasvathy et al., 1998).

With respect to the concerns related to the interaction terms of logit models (see Ai and Norton, 2003), I have performed the INTEFF analyses following Norton, Wang and Ai (2004). Since I cannot run the INTEFF function when there are more than two interaction terms in one regression – i.e. A*B and A*C – I have reran the logit models of Table 2.3 by including only one interaction terms for each regression. That is, we ran A, B, and A*B for one regression and A, C and A*C for another regression and so on.[12] Generally, after running the INTEFF function for our logit models, the coefficient sign and statistical significance holds similar as our Table 2.3.[13]

Overall, results in Table 2.3 suggest that affiliated bankers are performance sensitive and are generally risk-averse, being sensitive to firms' risk when deciding on CEO's dismissal unlike other independent directors. These results support our H1 and H2. Also, Table 2.3 results are consistent with Mitchell and Walker (2010) and Sisli-Ciamarra (2006) findings that affiliated bankers are the ones who have the most incentive to monitor.

2.4.2 Announcement returns on forced CEO turnover news

We adopt an event study methodology to find out whether the CEO forced turnover announcement had yielded any positive effect on shareholder's wealth when commercial banker

[12] Table 2.3 of forced turnover regressions have A, B, C, and A*B and A*C all at one regression.
[13] For detailed results of such INTEFF analyses, it can be obtained directly from the author.

directors are present on the board. We use data that have both CEO forced turnover data and the BoardEx data. For data that has missing BoardEx data, I do not use them for analysis. As regards, we start with total of 351 forced turnovers. Among them, 17 observations are found to be confounding events and so are eliminated. Then, we eliminate data that has missing financial data. As a result, we use 317 forced turnovers to examine CEO turnover announcement effect.

To calculate for the cumulative abnormal returns (CARs), we use the standard event study methodology used in the literature. Abnormal returns are calculated using the market model with CRSP value-weighted index. [14] The parameters are estimated over 120 days where ending day of the estimation period is 30 days prior to the announcement. Table 2.4, Panel A reports the summary statistics of the data that only includes the forced CEO turnover announcement news. Panel B-C reports abnormal returns (ARs) of -1, 0, and +1 day where t=0 is the CEO turnover announced date. Also, Table 2.4 reports CARs for the window (-1,+1), (-2,+2), (-5,+5), and (-10, +10). Panel B shows that the forced CEO turnovers are generally considered as negative news in our sample. However, as can be seen from Panel C of Table 2.4, firms that have bankers on their boards show that stock market reacts favorably to the forced CEO turnover news. For example, for CAR (-1, +1), we can see that mean (median) CARs is -1.14% (-0.34%) for firms with no banker director, while CARs for firms with bankers on board is 3.52% (0.60%). The difference of CARs whether there is a banker or not on the board is significant at 2.5% (2.77%). This result supports our H3 that bankers' existence on the board is positively associated with forced CEO turnover news.

[14] Other models such as Equal weighted market index model, Fama French 3 factor model, or Fama French 4 factor model shows similar inferences on CARs for forced turnover announcements.

2.4.3 Multivariate analysis on forced CEO turnover announcement returns

Since CAR (-1, +1) is statistically significant for forced turnovers and is primarily used by previous literature, from here on, analysis on forced CEO turnover CARs will be done using the window (-1, +1).

To further examine H3 and investigate H4, we perform a multivariate analysis with OLS regression using CAR (-1,+1) as our dependent variable. All our empirical analysis in this section is based on forced CEO turnovers. With respect to control variables, we follow CEO turnover and corporate governance literature. In the analysis, we control for firm size using natural log of total assets[15], accounting performance using industry[16] median adjusted ROA, and stock performance using annualized daily excess stock returns over CRSP value-weighted index. Since Bushman et al. (2010) posit that idiosyncratic volatility is a risk related to CEO talent on firm performance and actually find that likelihood of CEO turnover is increasing function of idiosyncratic risk, we control for idiosyncratic volatility constructed as in Bushman et al. (2010). Additionally, book-to-market equity is included to control for growth opportunities and include 1{CEO outsider succession} dummy, where the variable equals one when CEO is succeeded by an outsider. For all models in this section includes industry dummy and year dummy to control for any possible fixed effects and the standard errors are clustered at firm

[15] Using natural log of sales to proxy for firm size yields qualitatively similar results.

[16] Industry is defined using Fama-French 49 industry classification.

level.[17] Due to limited data, we only perform multivariate analyses with fraction of all banker-directors on the board and do not examine the effect of affiliatedness.[18]

Regression results in columns (1) – (2) of Table 2.5 confirm that market on average reacts positively to forced CEO turnover news when there are more independent directors as well as when there are more bankers sitting on the board.[19] Average CAR (-1, +1) is -0.69%; but by having fraction of bankers to be about an average (1.29%) in the board room, it increases the forced CEO turnover announcement effect on stock return by 0.356%. This finding implies that CEO dismissal decision is seen relatively more positive to shareholders when there are more bankers on the board.

In order to examine H4 we do further analysis with interaction terms with performance measures and director variables on CARs (-1,+1), which the results are reported in columns (3) – (8) in Panel A of Table 2.5. Coefficient on interaction terms show statistically significant negative sign only when performance measures are interacted with fraction of banker director variable. Column (5) shows that having average size (1.29%) of banker directors on the board increases the forced CEO turnover announcement effect by 0.47% and for firms that experience inferior ROA compared to the industry, let's say even by 0.1% (i.e. show negative industry

[17] Although not reported in this paper, Industry clustering or 2 dimensional clustering, where it is clustered at firm- and year-level, show qualitatively similar inferences.

[18] In the subset of data, we only have 1 firm-year that has affiliated bankers on the board.

[19] In unreported regressions, when fraction of outside directors are split into banker directors and non-banker directors, we find that both types of directors have positive association with the forced CEO turnover announcement returns. What is interesting is that when there are more banker directors on the board, the forced turnover announcement is more positive compared to when there are more non-banker directors on the board and the difference between these two coefficients is statistically different at 5% significance level. This finding implies that banker's existence on the board has more positive association than that of non-banker directors on CEO turnover announcement effect, supporting our H3.

adjusted ROA of -0.1%), with average sized banker-directors will increase its shareholders' response to forced CEO turnover news by 0.26%. Considering the unconditional mean of CAR (-1, +1) being -0.69%, these positive effect of having bankers on the board is economically significant. Generally, we find that firms with bankers on the board, forced turnover news is perceived to be more favorable news when ROA or cash flow is inferior relative to the industry performance prior year to the CEO turnover year.[20] On the other hand, these performance interaction effects do not appear with outside directors. These results support our H3 and H4.

However, when fraction of banker director variable is interacted with risk measure, as can be seen in Panel B of Table 2.5, I do not find any significant result on the effect of forced CEO turnover announcement news. Rather, it is positively seen by the market if *independent directors* are associated with it, and not specifically with banker directors. This may imply that banker directors' firing decision rule based on firm's risk is not value-enhancing for shareholders' perspective. In other words, banker's conflict of interests as a representative of creditors to reduce downside risk is not perceived positively by the shareholders, supporting Jensen and Meckling (1976).

2.4.4 Post-performance analyses

Figure 2.1 Panel A shows industry median adjusted ROA from 4 years prior to 3 years after the CEO turnover year. The group is divided for firms with banker directors ("has CBD") and for firms without banker directors ("no CBD"). Figure 2.1 shows that both groups' industry median

[20] In unreported regressions, when negative NI dummy was used as our performance measure instead of ROA, I find consistent results.

adjusted ROA falls rapidly until the CEO turnover year and slightly increases after the CEO turnover year. However, we see no statistical difference between the two groups (see Table 2.6 of Panel A). In order to examine whether these performance changes meaningfully from prior year to CEO turnover year to CEO turnover year or after by different group of firms, we perform a difference-in-difference (DID) test. Those analyses are reported under Panel B of Figure 2.1 and statistical tests are reported under Table 2.6 Panel B. Figure 2.1 Panel B figure shows that firms with banker directors have less and less negative ROA changes after the CEO turnover whereas firms without banker directors have more and more negative ROA changes for the same period of time. However, these ROA changes are not statistically different from firms with banker directors to firms without banker directors for all periods (see Figure 2.1 Panel B).

For further analysis, we perform OLS multivariate regression with dependent variable being a change in industry median adjusted ROA between the CEO turnover year and one year after the CEO turnover-year, and the results are presented in Table 2.7. Post-performance analysis is based on the same data that w analyzed for forced CEO turnover announcement effect.

The result in column (2) of Panel A in Table 2.7 indicate that as there are more bankers on the board, industry median adjusted ROA is increased after 1 year have passed since CEO turnover year. This result suggests that commercial bankers' existence on board helps firm to revive faster than for firms without commercial bankers, possibly by providing appropriate financial advice. Moreover, this result is economically significant: the unconditional mean of industry adjusted ROA before the CEO turnover for this data sample is 0.024% and by having an average fraction of banker directors on the board (1.29%) would lead to 0.26% increase in industry adjusted ROA after the CEO turnover. Columns (3) – (5) results show that firms with

relatively more banker directors revives faster when non-industry adjusted ROA prior year to the CEO turnover year was inferior.

Panel B in Table 2.7 uses interaction with risk measures. Columns (1) – (3) of Panel B use stock return risk while columns (4) – (6) use idiosyncratic risk to proxy for firm's risk.[21] Specifically, we see that when firm's risk was high prior year to forced CEO turnover for firms with relatively more banker directors, industry median adjusted ROA increases after one year CEO was dismissed.

On the other hand, with respect to post-risk performance analyses, we first do a univariate test whether there are any differences in risk measure years surrounding the CEO turnover between the firms with bankers on the board and those without the bankers. Figures 2.3 and 2.4 show results on such matter and we generally find that firm's risk measures reduces after the CEO turnover – however, in this univariate analyses or in difference-in-difference test we find no statistical difference between firms with banker directors and without banker directors (see Table 2.5 Panels E, F, G, and H).

Table 2.8 reports results with respect to post-risk performance analyses. Panel A of Table 2.8 uses change of idiosyncratic risk performance from CEO turnover year to 1 year after as a dependent variable. We find that idiosyncratic risk makes sense whether we use the dummy variable of high change of risk or the level variable. That is, with more bankers on the board, higher the idiosyncratic risk at t= -1 or if the change of the idiosyncratic risk was high[22] during t= -2 and t= -1, then post-idiosyncratic risk after the CEO turnover decreases.

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[21] In unreported regressions, we interact with ROA risk and with KMV expected default risk and find qualitatively similar results but with no statistical significance on the interaction coefficient.

[22] Change of idiosyncratic risk is considered high when the change from t= - 2 to t= -1 is in the upper 25% among the data sample.

Likewise, Panel B of Table 2.8 shows the result using ROA risk. Columns (1) – (3) uses the change of ROA risk from CEO turnover announced year (t=0) to t=+1, while columns (4) – (6) uses the change of ROA risk from t=0 to t=+1 as the dependent variable. We find that higher the ROA risk at t=-1, lower the ROA risk 1 year after the CEO turnover year with more banker directors on the firm.

Overall, post-performance analyses suggest that firms with more bankers on the board, accounting performance increases one year after the CEO is fired when prior year's ROA was inferior while post-risk decreases when prior year's risk was high. Such results infer that boards with more bankers appropriately fire poor-performing CEOs; but also those firms are more involved in firing risk-loving CEOs, an action that may be in conflict with shareholders' interests.

2.4.5 Compensation regressions

We use three different measures for our analysis on level of compensation: total compensation, cash compensation and equity compensation. Total compensation is the sum of salary, annual bonus, restricted stock grants, valuation of option grants and all other payouts (total compensation is tdc1 variable from the EXECUCOMP data). Cash compensation is the sum of salary and bonus compensation. Equity compensation is the sum of restricted stock grants (RSTKGRNT variable before year 2006 and STOCK_AWARDS_FV from year 2006 onwards in Anncomp table of ExecuComp dataset) and option compensation (OPTION_AWARDS_BLK_VALUE variable before year 2006 and OPTION_AWARDS_FV from year 2006 onwards in Anncomp table of ExecuComp dataset). Nonequity compensation

calculated as total compensation minus the equity compensation. We use the level of pay, where we take a natural log of them due to high skewness in dollar-form of compensation. In order to include 0 values in our observation, we calculate the pay by adding 1 before taking natural log of them.

According to Core et al. (1999), board of director characteristics are associated with CEO compensation level. As regards, we would like to investigate if the existence of commercial banker directors is affecting CEO compensation level in any ways and also see if it is related with any performance measures or risk measures.

A. Control variables

For control variables used in CEO compensation analyses, we have followed similarly to Core et al. (1999). That is, firm size, BE/ME (proxying for investment opportunity), stock performance, accounting performance, and firm's risk are included as control variables. Also some CEO and board characteristics are controlled as well: whether CEO is also a chair, whether CEO has more than 5% of ownership, fraction of institutional ownership and board size.

Also, we can expect that level of pay increases when firm performance is good. As regards, firm performance is controlled using accounting return on assets and the annual stock market return -- all performance measures are industry-median adjusted. Consistent with prior research on executive compensation (e.g. Core et al., 1999; Core, 1997), we also include measures that proxy for firm risk as our controls.

Most control variables in in Tables 2.9, 2.10 and 2.11 are consistent with the literature: when CEO is also a chairman, they are able to extract more rents; when book-to-market equity is lower

(i.e. when firm is experienced with greater growth opportunities) compensation is stronger, as claimed in Smitt & Watts (1992) and Gaver & Gaver (1995).[23] When stock/accounting performance is good compensation increases and vice versa; CEO who has high equity ownership receives lower CEO total compensation.

B. Regression analyses

In order to examine H6, that is whether banker director affects executive pay compensation and to what extent in association with performance or risk measures, we use annual compensation data from ExecuComp. Table 2.9 uses natural log of 1+total compensation, Table 2.10 uses natural log of 1+ equity compensation, and Table 2.11 uses natural log of 1+cash compensation as our dependent variable. In all specifications in Tables 2.9 – 2.11, firm fixed effect model have been used to minimize for any possible endogeneity problems. Moreover, year dummies are included in all specifications to control for year fixed effects and the standard errors are clustered at the firm level.

Results in Table 2.9 Panel A show that firms with more affiliated bankers on the board, CEO total compensation is reduced when prior year's KMV expected default risk was high. As there are more affiliated bankers on the board, if firm has higher probability that firm will default in the coming year, then CEO total compensation is reduced accordingly. That is, using the results of column (4) of Panel A, if affiliated bankers occupy 1% of the total board members, log of CEO total compensation will decrease by factor of 0.01823 along with KMV EDF's measure.

[23] Others report a negative correlation between growth opportunity proxies and CEO incentives , especially equity incentives (Bizjak et al, 1993; Yermack, 1995).

Considering the fact that KMV EDF measure ranges between 0.01 and 35, log of CEO total compensation can be reduced as much as 0.63805 by having only 1% of affiliated bankers on the board.

Moreover, results in Panel B in Table 2.9 show that firms with more affiliated banker directors would reduce CEOs' total compensation if prior year's firm performance was inferior. Particularly, this result is statistically significant if prior year's annual stock return was used as firm performance measure.

Table 2.10 analyzes the banker directors' effect with firm's performance and risk on CEOs' equity compensation. As can be seen in columns (3) and (4) of Panel A in Table 2.10, results show that with relatively more affiliated bankers in the firm, equity compensation is reduced when firm's KMV expected default risk is high. This interaction effect between KMV EDF and fraction of affiliated banker director is statistically and economically significant on CEO's equity compensation. By having 1% of affiliated banker directors on the board, those firms are more involved in reducing CEOs' equity compensation by factor of 0.0946 when KMV EDF measure is high. In other words, log of CEO equity compensation can be reduced as much as 3.311 (= 0.0946*35) with 1% of affiliated banker's existence on the board, while unconditional mean of log of equity compensation is 6.119.

In addition, Panel B of Table 2.10 shows that as there are more bankers on the board, if firm's performance deteriorates then equity compensation is reduced accordingly. And this effect is particularly true if the bankers are affiliated. Columns (1) – (4) of Panel B uses firm's stock return as performance measure and results shows that equity compensation is more likely to be reduced if firms have affiliated bankers compared to firms with nonaffiliated bankers on the board. The coefficient between these two is significantly different at 0.000% level. On the other

hand, when accounting performance is not good, equity compensation is likely to be reduced by firms with affiliated bankers or by firms with nonaffiliated bankers. However, the difference between these two interaction coefficients in columns (8) is not statistically significant at 10% level. As regards, we cannot say that firms with more affiliated banker directors are more ROA-performance sensitive in constructing CEO's equity compensation than firms with more non-affiliated banker directors.

Additionally, as in Panel A of Table 2.11, cash compensation is also reduced when firm's KMV expected default probability increases for firms with affiliated banker directors' presence. (However, this is not much economically significant: having about 1% of affiliated bankers on the board, log of cash compensation would decrease by factor of 0.0046 interacting with KMV EDF's measure. Average of log of cash compensation is 6.896 but log of cash compensation can be decreased by 0.161 (=0.046*35) at best by having 1% of affiliated bankers on the board.)

On the other hand, cash compensation does not change in accordance with poor firm performance as can be seen from Table 2.11 Panel B. This is consistent with prior research that cash compensation is insensitive to firm performance.

Moreover, pay-performance-sensitivity (PPS)[24] increases for firms with banker directors after the CEO turnover while PPS does not increase for firms without banker directors. And this PPS change is statistically different for firms with banker directors and without banker directors and time period of (-1, +1) and (-1, +3). (see Figure 2.5 of Panel B Table 2.6 Panel J). Figure 2.6 of Panel B and Table 2.6 Panel L shows the difference-in-difference test of Vega changes of firms with banker directors vs. firms without banker directors. In firms with banker directors, their Vega increases after they force out the CEOs while firms without banker directors has not

[24] This Pay-performance-sensitivity (PPS) is measured following Core and Guay (2002). In untabulated analyses, I also measure PPS following Yermack (1995) and find consistent results.

much change in Vega before and after the CEO turnover. This difference is statistically different at 10% level for period between (-1, +1), and statistically different at one-tailed 10% level for period between (-1, +3). These results suggest that after the CEO turnover, CEOs equity compensation of firms that have bankers on their boards becomes more sensitive to firm's stock price (stock performance) and to firm's equity risk.

All of the results in Tables 2.9 – 2.11 and Figures 2.5 and 2.6 generally support the view that affiliated banker directors discipline CEOs via controlling CEO compensation when firm performance is not good. Particularly, the results suggest that equity compensation is more susceptible to performance results with bankers on the board. What is more interesting is that affiliated banker directors are very concerned about firm's risk (measured by KMV EDF) that they try to avoid/reduce firm's default risk by controlling CEOs behavior via CEOs compensation scheme that reduces in accordance with firm's riskiness.

2.4.6 Announcement returns on commercial banker director appointments

Table 2.12 examines H8 and H9 and uses CAR (-1, 0) as the dependent variable, where CAR is obtained using the standard event study methodology used in the literature. Abnormal returns are calculated based on market model, where market model is estimated using returns from -150days to -31 days from the commercial banker director announced date. The model uses CRSP equal-weighted index as proxy for market portfolio. Because banker directors are outside directors, we use the same controls following corporate governance literature with outside

director appointments. As regards, control variables include firm size, firm performance, leverage ratio, idiosyncratic risk and cash flow.

From Table 2.12, we can see that generally stock market reacts favorably to bankers' appointment as board of directors for firms with negative cash flow or when firm experiences financial distress, measured by KMV EDF. In fact, Figure 2.7 shows industry median adjusted KMV EDF (risk) before and after the bankers' appointment on firm's board. Although it does not show huge statistical significance (see Table 2.13 Panel A and B for test of difference), we still can see that banker directors seem to be appointed when KMV EDF rises suddenly. These results may imply that firms do favor bankers to be represented on the board when they experience some financial problems, either to get help with financial advice, debt market expertise, or with certification role that bankers can provide.

In Table 2.12, from columns (2) – (7), each control variables are interacted with 1{Affiliated BD}, which is an indicator variable taking a value of one when the appointment was an affiliated commercial banker and zero otherwise. It is interesting to see that firms that experienced deteriorating stock performance favors affiliated commercial banker's appointment more.

Overall, Table 2.12 findings suggest that bankers' appointment is seen favorably especially for firms who are experiencing cash flow problems or who have high credit risk, supporting H9. Particularly, affiliated banker's appointment to the board is more favorable when firm experienced an inferior stock performance. This stock market reaction could be in line with the fact that bankers, once appointed as board of directors, can provide favorable loan terms and reduce cost of borrowing, either via enhanced information flow or via certification role of bankers. This is consistent with the view that companies are able to attain financing easier if there are bankers on the board (Ramirez, 1995; Guner et al., 2008). Moreover, this result is

partially in line with bankers reducing information asymmetries for financially distressed firms, which in our case is measured by KMV Expected default risk, can be improved by having close bank ties with bankers' appointment to the board (Hoshi et al., 1991; Correa, 2008; Mitchell and Walker, 2010).

2.5 Robustness Check and Endogeneity concerns

First, in order to minimize the endogeneity issue, we replicate all the aforementioned analyses where (industry median adjusted) ROA performance measure was used with change in (industry median adjusted) ROA performance. As tabulated under Table 2.14 Panel A, we see that CEO turnover probability is more likely as there are more affiliated banker directors when change from t = -2 to t= -1 is negative (t = 0 is the CEO turnover year). As the change is more negative, with more affiliated banker directors on the board, forced CEO turnover is more likely. Moreover, a different thing that we find when change in ROA measure is used instead of level of ROA is that nonaffiliated banker directors significantly respond to negative change in ROA in association with CEO turnover probability. However, we find that coefficient of affiliated banker directors' interaction effect is statistically different (at 1% level) from that of unaffiliated banker directors'. Hence, from this result, we find consistent result with our previous findings that affiliated banker directors respond sensitively to firm's performance measure when deciding on CEO removals. Plus, in this robustness section, we find direct evidence that in fact affiliated bankers are more sensitive to firm performance than unaffiliated banker directors.

Table 2.14 Panel B uses 2 year lag of ROA for performance measure instead of using 1 year lag. We find consistent results that CEO turnover probability is more likely with more bankers on the board based on poor firm performance.

When change in ROA is used for the forced turnover announcement analyses and for the CEO compensation regressions, we find qualitatively similar results but with less statistical significance on the interaction terms with the fraction of banker directors. Hence, the tables are not reported.

Second, another way to minimize the endogeneity issue of the possibility of hiring the banker directors right before the firm forces out the CEO, I have excluded a sample where bankers tenure on the board is less than 2 years. In other words, I have replicated the aforementioned analyses using data where bankers' tenure on the board is equal to or more than 2 years. I still find consistent results.[25]

Lastly, we dropped all of the financial institutions in our data since prior studies show that financial institutions act differently than other non-financial institutions. We find consistent results.[26]

2.6 Conclusion

[25] For detailed results, please contact the author.

[26] For detailed results, please contact the author.

In this paper, we analyzed whether commercial banker once appointed does its monitoring role effectively and whether they are risk-averse. We investigate this by looking at one of the main role that board of directors do – monitoring and controlling the managers via CEO compensation and CEO turnovers. This study is important because, unlike other types of independent directors, banker directors can bring about beneficial relationship but face potential conflicts of interest as shareholders and as (potential) creditors (Krozner and Strahan, 2001).

We find that banker directors, and particularly the affiliated ones, are generally performance sensitive when deciding on CEO's removal. Moreover, affiliated bankers are sensitive to risk measure as well when deciding on CEO's dismissal unlike other independent directors. Also, we find that stock market reacts favorably to forced CEO turnover announcement when banker directors are present. This finding implies that banker directors' decision on firing a CEO is not value destroying to shareholders and is actually seen as a positive decision in terms of shareholders' interest. This positive stock market reaction to forced CEO turnover news is particularly true when performance is poor prior year to the CEO turnover with banker directors' presence on board. If performance was poor prior year with banker directors on the board, forced turnover announcement is perceived to be more positive. Besides, firm's post performance after the CEO turnover increases as there are more commercial bankers on the board and the result is stronger when firm was experiencing poor accounting performance or when firm's risk was high prior year to the CEO turnover. This result suggests that bankers' existence on board helps firm to revive faster than for firms without bankers, possibly by providing appropriate financial advice and monitoring.

However, forced CEO turnover announcement news is not perceived as positive news by shareholders when banker directors are associated with risk measure. This may imply that banker

directors' firing decision rule based on firm's risk is not value-enhancing for shareholders' perspective. In other words, banker's risk-averseness may not be in line with shareholders' interests.

With respect to CEO compensation, we find that banker directors discipline CEOs by reducing their equity compensation when firm performance deteriorates or when firm is risky. Particularly, we find that the affiliated banker directors are more conservative in paying out equity compensation when prior year's performance was inferior. Moreover, we find that affiliated banker directors are sensitive to firms' expected default risk and cut CEO compensation accordingly. Risk sensitiveness to CEO pay holds for both equity and cash compensation, indicating that affiliated bankers are very concerned with firms' risk of becoming bankrupt. In conclusion, our paper suggests that banker director's monitoring role on CEOs' behavior is effective but may be more aggressive in terms of risk. In fact, banker's appointment on board is seen favorably for firms who are experiencing cash flow problems or who have high credit risk, as shown from the result of banker directors' appointment announcement effect. Particularly, the affiliated banker's appointment to the board is more favorable when firm experienced an inferior stock performance during prior year. This stock market reaction may indicate that bankers are needed and welcomed by those weak cash flow firms or high risk firms because they are expected to provide effective monitoring with their financial expertise.

CHAPTER 3

STOCK MARKET LIQUIDITY AND SHORT-TERMISM-DRIVEN CEO TURNOVER[1]

3.1 Introduction

Does an improvement in stock market liquidity cause the shareholder to be more myopic? Porter (1992) argues that the high liquidity of the US stock market with and myopic investors is the primary factor of deterring long-term investments, such as R&D, and weakening the US corporations in global competition. The reason is because the impatient shareholders can always easily sell off the stock whenever they are disappointed with short –run accounting performance such as Earnings Per Share (EPS hereafter), instead of taking into account of the true value of long-term investments. Such selling-off caused by myopic investors would trigger positive feed-back trading by momentum traders, which would result in a substantial decline in stock price, and eventually make the company fall an easy target of takeover (Stein 1989). As a result, the CEO would be more subject to the force of the outside labor market if she does not satisfy the demand of the myopic investors under highly liquid stock market. Therefore, Thurow (1993)

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even argues that the regulators should make a policy to reduce stock market liquidity to encourage long-term investments.

Maug's (1998) theory, on the other hand, argues that better liquidity makes the formation of blockholders easier in the first place because of the reduced price impact of their trading [2]. Since blockholders have more incentive to monitor the management with less myopic investment horizon, their presence under better stock market liquidity would encourage long-term investments. Edmans (2009) takes a step further and argues that more liquid trading makes the price more efficient (see Chordia and Roll, 2008; Boehmer and Kelly, 2009) and better impounds the true value of long-term investments. His argument is that despite the easiness of exiting for the blockholder from the company, the fact that the blockholder does not unwind her position gives a signal to the market that the management has high quality long-term investment projects that is not just shown in the short-term accounting performance. This paper is an empirical study of testing both Maug (1998) and Edmans (2009) in the context of CEO turnover. Specifically, our research question is : "Are CEOs fired more or less sensitively to short-term oriented performance measure when the stock market is more liquid?"

Previously, blockholders were understood as the ones that enjoy private benefits of having control (Barclay and Holderness 1989, 1991). This is more suitable for insider blockholders. However, recent strand of literature focuses on outside blockholders. And in fact blockholders in Edmans (2009) paper refers to outside blockholders, presumably institutional investors. Such outside blockholders have more incentive to spend costly efforts to gather information about the company (e.g. what is behind a negative earnings surprise? Is it because of bad CEO quality? Or is it because of costly yet very promising R&D?). Such information

[2] See Admati and Pfleiderer (2009); Edmans (2009); and Edmans and Manso (2011) for this line of theories.

gathering efforts make the blockholders more informed. Large shareholders are more informed (Bushee and Goodman 2007; Parrino, Sias, and Starks 2003; and Rubin 2007) and institutional investors make the price of a stock more informative, especially when multiple institutions compete for trading profits (Boehmer and Kelley 2009). However, institutional investors are not homogeneous in terms of their investment horizon and characteristics (Bushee 1998; Gaspar, Massa, and Matos 2005). Then the question becomes "what kind of institutional investors matter as blockholders?"

Although institutional investors as a whole have been sometimes criticized for their influence on corporations to be short-term oriented (Drucker, 1986; Porter, 1992), Bushee (1998) finds that "transient" institutional investors, who hold more diversified portfolios with short-term holding periods and with a momentum trading strategies, are the major driving force of managerial myopia. He finds that firms with high ownership by transient institutions are more likely to cut long-term R&D investment to meet the short-term analysts' expectations.[3] In contrast, he finds that dedicated institutions encourage long-term oriented investments. Considering such heterogeneity in institutional investors, an improvement in stock market liquidity could be a double edged sword in terms of discouraging short-termism. For transient investors, better liquidity would reduce their transaction cost and price impact of winding down their position whenever they are dissatisfied with the firm. As a result, firms with high transient ownership would suffer from short-termism even more after an improvement in liquidity. For the dedicated investors, enhanced liquidity would increase their position with lower cost (price impact) and enable them to implement their intervention strategy more easily such as replacing

[3] Bushee (1998) defines two more kinds of institutions. Dedicated institutions are more like activist investors in the sense that they do not trade frequently and that they encourage the firm to invest more in long-term oriented R&D. Quasi-indexers are passively investing institutions following the benchmark index, which makes their trading less frequent.

the CEO, because they can easily buy and sell with lower transaction cost. As a result, firms with high dedicated ownership would reduce short-termism after an improvement of liquidity.

Therefore, our research question is whether stock market liquidity causes the implicit CEO incentive to be more or less short-term oriented depending on the presence of different kinds of institutional investors. Gibbons and Murphy (1992) Jensen and Murphy (1990), Holmstrom (1999) as well as Kwon (2005) states that the threat of dismissal is an implicit incentive, whereas the pay or remuneration is an explicit incentive. Dikolli, Kulp, and Sedatole (2009) find that firms with high ownership by transient institutions make the *explicit* incentive of CEO, such as cash bonus and equity compensation, more sensitive to long-term performance and less sensitive to short-term accounting earnings. They argue that the presence of high transient ownership place an obvious implicit incentive for the CEO to take actions to increase current earning. Therefore, the explicit incentive should be designed more long-term oriented to offset the short-oriented implicit incentive under the pressure of transient institutional investors. Dikolli, Kulp, and Sedatole (2009) *assume* that the implicit incentive of threat of dismissal would be short-term oriented. Hence, in this paper, we empirically test whether indeed it is the case. We find supporting evidence, however, only for the sample of more liquid stocks.

We use the dummy variable whether the annual earnings per share (EPS) is negative or not as our short-term oriented performance measure. Dikolli, Kulp, and Sedatole (2009) use change in ROE (Return on Equity) as a measure of short-term performance; however, we believe that the negative EPS dummy captures the myopic interest of the investors better than change in ROE. We also control for return on assets. We also thought about a dummy variable that is one if the actual EPS was less than the median EPS estimate by the analysts. However, simple EPS negativity would be more salient measure of myopic performance, because more myopic

investors would be quickly disappointed with the EPS being negative even before considering the market consensus (median EPS estimate).

An empirical challenge in our paper is to identify an exogenous change in stock market liquidity, because liquidity of company stocks may decrease with poor performance which may cause endogeneity problem in CEO dismissal regressions. As regards, we take the decimalization as an exogenous increase in stock market liquidity for our CEO turnover study. In early 2001, the minimum tick size of the US stock exchanges was reduced from $1/16 to $1/100 (January 29, 2001 for NYSE/AMEX and March 12 ~ April 9, 2001 for NASDAQ), so called "decimalization". In fact, Furfine (2003) and Bessembinder (2003) find that decimalization resulted in a significant increase in stock market liquidity. Moreover, Fang, Tian, and Tice (2010) also use decimalization as an exogenous shock to liquidity and find that productivity of innovation of the firms has significantly decreased disproportionately more for firms with high ownership by transient institutions after decimalization. Given that our sample period covers the financial crisis period of 2008 and 2009, one may question that the final two year period may be suffering from liquidity shock, which may add to substantial noise. The result is robust when we exclude the financial crisis period (unreported). Also, we try alternative classification of high versus low liquidity firm-year sample by computing Amihud (2002) illiquidity measure. We split the sample into quartiles and find that the result is stronger for more liquid firm-year sample. For further robustness check, we try relative bid-ask spread as our illiquidity measure following Amihud and Mendelson (1986). Then, we split the sample by high vs. low based on the median of relative spread, where "high" samples are the ones of illiquid stocks.

Consistent with Maug (1998), we find that the ownership by dedicated institutional investors (presumably exercising interventionist strategy more) increase significantly 6 to 4 quarters before a forced CEO turnover compared to matching firms, after decimalization. This is consistent with the finding of Helwege, Intintoli, and Zhang (2011). They document that institutional investors are not always showing "Wall Street Walk" of voting with their feet. Rather, they find persistent presence of significant, yet fairly uncommon, activist movements by institutional investors, which lead to more CEO dismissals. We also find that when the ownership by dedicated institutions is high, the sensitivity of forced CEO turnover to short-term oriented performance became significantly lower after decimalization, ceteris paribus. This suggests that dedicated investors indeed discourage myopic CEO turnover decisions. Most importantly, we consistently find that transient institutions make the CEO dismissals more sensitive to short-term oriented performance measures under better stock liquidity. Even though the short-termism driven CEO turnover under pressure of myopic investors has been implicitly assumed in the literature for a long time, we are the first to document with empirical data and with an exogenous shock in stock market liquidity.

Another empirical challenge is the reverse causality between liquidity and governance and institutional ownership and governance. Chung, Elder, and Kim (2010) find that good governance cause better liquidity. They argue that good governance firms have better transparency in their financial reporting, which reduces adverse selection cost in bid-ask spread. Chung, and Zhang (2012) takes a step further and find that good governance companies attract more institutional investors thanks to the better liquidity. Moreover, one may argue that splitting the sample based on decimalization in 2001 is very close to splitting the sample into before and after Sarbanes Oxley Act of 2002 (SOX), which would then sound similar to splitting into bad vs.

good governance. Then, one may even argue that all the results that we find are actually driven by governance strength, not by liquidity.

We recognize that the governance indeed influences liquidity, and that a part or our results may have been driven by governance improvement. However, if we believe that our result is totally driven by different governance regime, we cannot reconcile why transient institutional investors should behave in more short-term oriented manner under stronger governance regime. Borrowing from the literature on SOX, one may argue that the one-size-fits-all hastily made governance regulation was in fact not effective and rather costly (Zhang 2007; Linck, Netter, and Yang 2008), which may have triggered the board to be more sensitive to the myopic pressure coming from the transient institutions. However, such argument already implicitly nullifies the improvement of governance after 2002, while the liquidity in the stock market has obviously improved after 2001. Also, we check by splitting the sample into quartiles of illiquidity measure (Amihud 2002), and find that our result is consistently stronger for high liquidity firm-years. One thing to notice is that the sample periods of Chung, Elder, and Kim (2010) and Chung and Zhang (2012) are 2001~2006, which is predominantly "after decimalization" period. In contrast, our sample period is 1992~2009.

Moreover, Gibson, Singh, Yerramilli (2003) study the effect of stock market decimalization in 2001 and find that among the three components of bid-ask spread (adverse selection cost, inventory cost, and order processing cost), only order processing cost has decreased substantially. Barber and Odean (2011) document that high-frequency trading and algorithmic trading became very much prevalent after decimalization thanks to the reduction of bid-ask spread (transaction cost). Also, Hendershott, Jones, and Menkveld (2011) find that algorithmic trading and high frequency trading improved liquidity by reducing adverse selection

cost. Therefore, the improvement of liquidity for each stock associated with the decimalization in 2001 resulted more from the exogenous change in microstructure environment than from a strengthening of governance.

Also, we should recognize that the ownerships by different kinds of institutional investors are endogenously determined. Chung and Zhang (2012) find that institutional ownership of different kinds of investors uniformly increases in governance. However, their study does not include the classification of transient, dedicated, and quasi-indexer institutions of Bushee (1998). Whether transient institutional ownership also increases in governance strength thanks to a better liquidity is ambiguous because better governed firms may also be less serving for the demand of myopic investors by encouraging long term investments. To the extent that the governance strength is concerned, we control for the proportion of independent directors (Weisbach 1998). Also, we control for CEO tenure, age and chairman duality to control for CEO power (Bebchuk and Fried 2004). To the extent that both institutional ownership and the likelihood of CEO dismissal is both determined by firm performance, we control for company's stock market performance. We use firm fixed effects and year fixed effects. To the extent that the institutional ownership is determined by time invariant firm characteristics, the firm fixed effects would remove potential endogeneity bias[4].

[4] We also tried two stage least squared regression to first predict the ownerships by different kinds of institutional investors as well as their interactions with after decimalization dummy and use the predicted values in the second stage CEO turnover regression. Following Bushee (2001), we used S&P rank, firm age, 1{firm is in S&P500 index}, dividend yield, market beta, leverage, sales growth, lagged book value of assets per share to predict the institutional ownerships. Even though the Durban-Wu-Hausman test results consistently suggest that we cannot reject the null that the instrumented variables are exogenous (p-value ranges from 0.274 to 0.688), the p-value of overidentification test result has been very small, which casts doubts about the validity of our instruments.

The evidence that CEO turnover is systematically driven by short-term oriented investors under improved liquidity is very important, because it implies that myopic investors' pressure would sustain for the newly appointed CEO after a forced dismissal of the predecessor. We find that short-termism-driven CEO turnovers are followed by a significant reduction in the R&D margin accompanied by a significant increase in the profit margin in the first full fiscal year under the reign of a new CEO. Xu (2011) finds that investment in R&D is negatively associated with the CEO contract horizon. Xu (2009) also finds that CEOs are less likely to invest in R&D in the final year of tenure and more likely to invest in R&D in the first year of tenure. Bereskin and Hsu (2011) find that new insider CEOs are more likely to bring technological innovation than new outsider CEOs. We study this issue from a different angle. Compared with Xu (2009), as long as the previous CEOs were fired under pressure from transient investors, we find that the new CEOs are more likely to reduce the R&D investment significantly in their first full fiscal year under their control.

The rest of the paper is organized as follows: Section 2 discusses the data and empirical methodology. We show the CEO turnover results and our analysis in Section 3. Robustness check on CEO turnover results are reported under Section 4. Event study of CEO turnover is shown in Section 5. Post CEO dismissal R&D margin is studied in Section 6. Then in Section 7 we conclude.

3.2 Data and Methodology

This study is based on CEO turnover from 1992 to 2009 in the Execucomp data set, which includes the compensation of the top executives of the largest 1,500 public firms in the United States. CEO turnover events until 2001 are graciously provided by Dirk Jenter. We hand-collect data about CEO turnover from 2002 to 2008 consistent with Jenter and Kanaan (2010) by investigating any name changes of the person with the annual CEO title in the data set. CEO turnover of Execucomp firms in 2009 are augmented by the Liberum Research database, which collects real-time information about turnover and promotions of executives and board members of all public firms in the United States since 2004. We use CRSP and Compustat for stock price performance and accounting information of the companies.

Using Factiva, we classify all CEO turnover into forced versus voluntary turnover, following Parrino (1997), which is commonly used in the literature (Bushman, Dai, and Wang, 2010; Jenter and Kanaan, 2008; Kaplan and Minton, 2008; Parrino, Sias, and Starks, 2003; Peters and Wagner, 2009, and Taylor, 2010). The algorithm is described in the Appendix A. CEO age and tenure is hand-collected from Factiva at the point of the CEO's departure, and this age information supersedes the age information provided by the Execucomp data set. Institutional ownership data is obtained from the Thomson-Reuters Institutional Holdings 13F Database (a.k.a. CDA/Spectrum 34 database), and the classification of the institutions into three categories (transient, dedicated, and quasi-indexer) is obtained from Brian Bushee's website. We use the US patent database of NBER as in Hirshleifer, Low, and Teoh (2011).

Amihud (2002)'s illiquidity measure, which is defined as the average ratio of the daily absolute return to the (dollar) trading volume on that day, gives the absolute percentage price

change of daily trading volume (or so called "daily price impact of order flow"). Although Amihud (2002)'s measure is not as accurate as other liquidity measure, it has an advantage that the data is readily available and we use the data from CRSP. This measure implies that higher the value, the more illiquid the firm's stock is.

Another liquidity measure we use is the "relative spread" in Amihud and Mendelson (1986). This measure is defined as the dollar spread divided by the average of the bid-ask prices at year end. This measure also implies that higher the value, the more illiquid the firm's stock is considered. We calculate the relative spread by using data from Trade and Quote (TAQ) from year 1992 to 2007.

Summary statistics are shown in Table 3.1.

One challenge in our testing is how to measure the short-termism of the board in forcing the CEO out. In order to pickup short-term-oriented performance measure, we use a dummy variable that is equal to one where annual earnings per share (EPS) is negative or zero otherwise. We believe this measure is a better myopic measure than "Negative Earnings surprise", which is calculated by subtracting median EPS estimate by the analysts from the actual EPS. The reason is just by looking at the negativity of EPS, a myopic investor would shun before even considering about the market consensus, which is the median EPS estimate.

We believe that if enhanced stock market liquidity made shareholders to become less short-term oriented in firing CEOs, the likelihood of CEO dismissal would be negatively correlated with the myopic measure, which is negative EPS dummy variable, after the decimalization (i.e. $\beta_2 < 0$ in the empirical model below). On the other hand, if higher aggregate ownership by transient institutions prevent the board from being more long-term oriented after the decimalization, the interaction between negative EPS dummy and the ownership by transient

institutions would be positively correlated with the probability of forced CEO turnover only for the sub-sample after decimalization. Our empirical model is as follows:

$$1\{Forced\ CEO\ Turnover\}_{t+1} = \beta_0 + \beta_1 \%TRA_t + \beta_2 1\{EPS < 0\} + \beta_3 \%TRA_t * 1\{EPS < 0\} + \gamma X_t + \varepsilon$$

where $1\{Forced\ CEO\ Turnover\}_{t+1}$ is the dummy variable that is one if the CEO was forced out in year t+1 and zero otherwise. $\%TRA_t$ is the percentage ownership by transient institutional investors. $1\{EPS < 0\}$ is a dummy variable equal to one when EPS is negative or zero otherwise. The industry grouping follows the Fama-French 49 industry definition. X_t is the vector of usual controls of forced CEO turnover. They are (1) the past one-year stock performance; (2) idiosyncratic risk over the past three years using a market model with monthly data; (3) accounting performance; (4) CEO tenure; (5) a dummy variable that is one if the CEO is at retirement age; (6) a dummy variable that is one if the CEO is the chairman of the board; and (7) a dummy variable that is one if the CEO has more than or equal to 5% ownership of the firm. One might try logit regression with a triple interaction term by inserting a time dummy variable that is one if the sample period is after decimalization. However, in such a case, multicollinearity among the interaction terms would be a non-trivial problem. Therefore, we run a logit regression based on the sample before decimalization, and another based on the sample after decimalization. Our key prediction is that $\beta_3 > 0$ only after decimalization period. In every regression, we run two models, one using industry-fixed effects and year-fixed

effects, and the other one using firm-fixed effects and year-fixed effects to minimize concerns about endogeneity, and we use a robust clustered standard error at the firm level.

Moreover, we use industry relative R&D margin (R&D expenditure divided by sales) as a proxy for long-term oriented investments to see if the new CEOs are willing to or reluctant to invest in such long-term projects conditional on forced CEO turnovers with transient institutional investors' existence. Other things being equal, if the board's decision, due to transient institutional investors' influence, to fire the CEO were indeed myopic after the decimalization, change in R&D margin after the forced turnover should be negative (or at least not positive).

3.3 Empirical Results

3.3.1. Univariate analyses on institutional ownership holdings surrounding CEO turnover - before vs. after decimalization

If the CEO dismissal decision was more short-term oriented after the decimalization, specifically for firms with high transient institutional ownership, as we hypothesized, we should be able to find some significantly different patterns of ownership by transient institutions surrounding CEO turnover. In Figure 3.1, we first plot the ownership level of transient institutional investors from eight quarters before to four quarters after a CEO turnover. After decimalization, we find a drastically decreasing trend in transient institutional ownership after forced CEO turnover occurs. Most of the selling off by the transient institutions takes place from the second to the last quarter prior to the CEO turnover (quarter zero). Whereas transient

ownership bounces back and increases further after a CEO turnover before decimalization, transient ownership keeps on declining after a CEO turnover after decimalization.

More precise analysis would be possible only if we have placebo firms that did not have forced CEO turnover. In Panels B and C of Figure 3.1, we compare ownership by transient investors of the event firms and that of the comparable firms that did not fire their CEOs. Following Helwege, Intintoli, and Zhang (2010), the control firms are constructed based on two criteria: size and performance. Among the Execucomp firm years, we eliminate the firm years of the company that fired the CEO from two years prior to one year after the event. Then for each event firm year, we restrict the matching sample to be only firms with market capitalization at 0.5 to 1.5 times that of the event firms at the end of the same fiscal year. Among these similar-sized candidate firms, we select the firms whose past one-year stock performance is the closest to the event firms. Through this procedure, we obtain 703 control firms for 739 event firms. Among the 703 matched pairs, 341 (362) pairs had CEO dismissals before (after) decimalization. First, we plot ownership by transient institutions and a 90% confidence band for CEO turnover firms and their control firms on Panels B (before decimalization) and C (after decimalization) of Figure 3.1. In Panel B, no difference is detected between the event firms and control firms in terms of ownership by transient institutions throughout the relative quarters before decimalization. However, after decimalization (Panel C), transient ownership of the firms that fired the CEO is significantly higher than that of the control firms. This evidence suggests that firms that fired the CEO after decimalization were more likely to do so because they had stronger pressure by transient institutions. By the time they fire the CEO, ownership by transient institutions is only marginally higher than that of the control firms. However, after firing the

CEOs, the event firms still maintain significantly higher ownership by transient institutions compared to the control firms.

We also investigate the ownership level of the other kinds of institutional investors surrounding forced CEO turnover, before versus after decimalization. In Figure 3.2 of Panel A, we compare ownership of dedicated institutions for the event firms and control firms before decimalization. We do not find any significant difference throughout the period. In Panel B of Figure 3.2, we compare ownership of dedicated institutions for the event firms and control firms after decimalization. An interesting pattern emerges. Although the level of dedicated ownership started at the same level two years prior to the event, dedicated ownership of the firms that eventually fire the CEO becomes significantly higher than that of the firms that did not fire the CEO since three quarters prior to the firing. Then one year after the CEO dismissals, the level of dedicated ownership converges with that of the control group. This evidence supports the prediction of Maug (1998) that the large shareholders engagement in shareholder activism such as CEO replacement would be higher if the market is more liquid. Our finding also is consistent with Helwege, Intintoli, and Zhang (2011) in that the activist/dedicated investors, who are more likely to be "dedicated" institutions according to Bushee's (1998) classification, tend not to walk away from the unsatisfactory CEOs, but that they slightly increase their holdings to force out the incompetent CEO compared to their counterfactual firms.

In Figure 3.3 of Panel A and B, we compare the level of ownership by quasi-indexer institutions for the event firms and control firms before versus after decimalization. We do not

find a significant difference in the level of ownership between event firms and control firms surrounding CEO turnover[5].

Overall, by examining the trends in Figures 3.1- 3.3, it is plausible that CEO turnover decisions were not strongly affected by a certain type of institutional investors' ownership before the decimalization. However, after the decimalization, firms that experienced forced CEO turnover had more ownership by transient as well as dedicated institutional investors prior to the actual event, possibly suggesting that such investors had strong effect on CEO dismissal decisions. The difference between the transient and dedicated investors' behaviors on CEO dismissal are detected by examining their ownership pattern around the CEO turnover event after the decimalization : transient institutional investors seem to sell out their position quickly as soon as they detect non-performing CEOs while the dedicated ones do not walk away from the unsatisfactory CEOs but instead increase their holdings to force those CEOs out.

3.3.2. Multivariate analyses on CEO turnover decisions by different institutional ownership - before vs after decimalization

Table 3.3 shows our primary results. In Table 3.3, we use a linear probability model, where the dependent variable is an indicator variable taking a value of one when there was a forced CEO turnover and zero otherwise. Panel A of Table 3.3 uses industry and year fixed effects, whereas Panel B of Table 3.3 reports results with firm and year fixed effects. For both

[5] As an alternative measure of transient institutional ownership, we use relative ownership by transient institutions, which is the transient ownership divided by the sum of dedicated ownership and quasi-indexer ownership as in Dikoli, Kulp, and Sedatole (2009). The result is consistent.

panels, columns (1) – (3) uses all data, whereas columns (4) – (6) only uses data before the decimalization event and columns (7) – (9) uses data after the decimalization.

The coefficient of the negative EPS dummy variable is only negative and significant for the subperiod of "after decimalization" (see Panel A column (9) and Panel B column (9)). This suggests that after 2001, CEOs became less likely fired even with negative short-term performance possibly due to improved market efficiency, which supports Edmans (2009) and Edmans and Manso (2010). In other words, the findings suggest that due to improved market efficiency, CEOs are not penalized by being fired for negative short-term performance.

On the other hand, it is interesting to note that the coefficient of the interaction between the ownership by transient institutional investors (%TRA hereafter) and negative EPS dummy is positive and significant for the period of "after decimalization" (see columns (7) – (9) for both Panels A and B in Table 3.3). On the other hand, before the exogenous shock in the stock market liquidity, we see that there are no significant effects of transient institutional investors associated with short-term performance in firing the CEOs (see columns (4) – (6) for both Panels A and B in Table 3.3). This supports our main prediction that $\beta_3 > 0$ only after the stock market improves in liquidity.

Altogether, with improved stock market liquidity, a typical company would *less* likely fire CEO based on inferior short-term performance possibly due to prices reflecting more of fundamental values. However, with relatively more ownership by transient institutional investors, the company would become more sensitive to short-term performance and are more likely fire CEOs penalizing for poor short-term performance. This latter result supports Coffee (1991) and Bhide (1993) in that more flexibility given to short-term oriented institutional investors increases the pressure on the board to fire the CEO in a myopic manner.

Together with transient institutions, Bushee (1998) identifies two more types of institutional investors: dedicated institutions and quasi-indexers. Therefore, we include ownership according to these two types of institutions and their interaction terms with the negative EPS dummy. In both Panels A and B of Table 3.3, columns (2), (5), and (8) include only the effect of dedicated institutions ownership (%DED hereafter) and its interactions along with those of %TRA. In columns (3), (6), and (9), we include the effect of quasi-indexers ownership (%QIX hereafter) and its interaction terms along with those of %TRA and %DED. The results in Table 3.3 of columns (5) and (8) of both Panels A and B are consistent with our initial results where only %TRA and its interaction terms were included for forced CEO turnover likelihood analysis. Particularly, we can see that in column (8) of both Panels A and B, coefficient of the interaction term between %DED and negative EPS dummy is negative and significant. This implies that after decimalization, dedicated institutional investors know more of firm's fundamental value and as regards are less sensitive to inferior short-term performance. Therefore, a firm with relatively more dedicated institutional ownership will not dismiss a CEO with respect to negative EPS and in fact will fire less based on short-term performance measure.

In Panel C of Table 3.3, we include additionally fraction of independent directors and its interaction term with negative EPS dummy, while using firm and year fixed effects. Researchers have found that higher board independence is associated with better corporate governance (Yermack, 2004) and hence is related to our analyses on CEO turnover decisions. However, even controlling for independent directors' influence on CEO dismissals and its interaction term with short-term performance measure, we still get consistent results. That is, for firms with higher ownership by transient institutions, increased liquidity in the stock market makes the CEO turnover decision more short-term oriented, while this myopic decisions on CEO dismissal has

the opposite direction for firms with higher ownership by dedicated institutions (see column (8) of Panel C in Table 3.3).

In Table 3.4, we use logit models for the same analysis done in Table 3.3. Panel A uses industry and year fixed effects while Panel B uses firm and year fixed effects. Panel C controls for firm and year fixed effects and include fraction of independent directors and its interact terms. Likewise in Table 3.3, we find consistent results. 1{EPS<0} * %TRA coefficient sign shows significant and positive sign after decimalization while the coefficient on interaction term between %DED and negative EPS dummy is negative and significant after decimalization and not significant before decimalization.

However, a subtle difference in Table 3.4 results from those of Table 3.3 is that the coefficient on the interaction term between %TRA and negative EPS dummy is positive and significant even *before* the decimalization: when industry and year effects are used, interaction term of %TRA and negative EPS dummy is positive and significant when %DED, %QIX and their interaction terms with negative EPS dummy are all included (see column (6) of Table 3.4 Panel A); when firm fixed effects is used, interaction term of %TRA and negative EPS dummy is statistically significant and positive in all columns (see columns (4) – (6) of Table 3.4 Panel B); on the other hand, when independent directors and its interaction terms are controlled with firm fixed effects, 1{EPS<0} * %TRA is not statistically significant, although we find qualitatively similar results.

Overall, the results from Table 3.3 and Table 3.4 altogether indicate that after a positive liquidity shock, transient investors became less tolerant of inferior short-term performance and as a result fire CEOs *more* based on short-term performance while dedicated investors became

more tolerant of poor short-term performance and hence force out CEOs *less* based on negative EPS performance.

3.4. Robustness check on likelihood of CEO turnover analyses

In order to check whether our results on short-term oriented CEO dismissal decisions by transient institutional owners after the increased stock liquidity are biased on a specific sample, we try other alternate specifications on measuring liquidity. Those results are reported under Table 3.5 and 3.6.

In Table 3.5, we try alternative classification by splitting the firm-years into low versus high liquid firm-years via Amihud (2002) illiquidity measure. We have divided the samples into quartiles. In both Panels A and B, column (1) uses data that belong to least liquid firms (75~100th percentile), column (2) uses data that are in the third quartile (50~75th percentile), column (3) uses firm-years in the second quartile (25~50th percentile), and column (4) uses the most liquid firm-years (1st quartile: 0~25th percentile). Moreover, both Panels A and B control for firm and year fixed effects and use the linear probability model. We find that the positive coefficient of the interaction term between %TRA and negative EPS dummy is significant for more liquid firms (see columns (3) and (4) in both Panels A and B). We also find that negative EPS dummy coefficient is statistically negative in the most liquid firms (see column (4) in Panel A in Table 3.5). Such results reinforce our previous findings that increased liquidity itself provides *less* myopic decisions on CEO dismissals on average but provides *more* short-term oriented decisions for firms with higher ownership by transient investors.

Another interesting to note is that in Panel B of column (1), we see that for least liquid firms with dedicated institutional investors behave myopic in deciding CEO dismissals, showing a positive and significant coefficient for %DED and negative EPS dummy interaction term. This may indicate that illiquidity has negative effect for the dedicated investors on being long-term oriented on CEO dismissal decisions and indeed lead dedicated institutional investors to be short-term oriented with less liquidity.

In Table 3.6, we replicate our results of Table 3.3 and 3.4, splitting the samples into two groups using median of Amihud and Mendelson (1986) relative-spread measure. “High” groups are the firm-years that are over median and hence firms that are regarded illiquid whereas “low” group, a group of below median, are more liquid firms. After then, we re-run the regression for each group using linear probability model with firm and year fixed effects controlled in columns (1) – (4), and industry and year fixed effects used in columns (5) – (8). We still find consistent results: i.e. liquid firms tend to show a positive and significant coefficient sign on interaction term between %TRA and negative EPS dummy and when %DED and its interaction terms are included in the analyses, its interaction term coefficient shows negative and statistically significant sign.

Overall, using different liquidity measures for robustness check, we still find consistent results that increased liquidity is makes firms to fire CEOs more sensitive on short-term performance measure with high ownership by transient institutional investors, while firms with more dedicated investors are less likely to dismiss a CEO based on myopic perspective.

Having examined the impact of myopic investors on CEO dismissals after a positive liquidity shock, we study the stock market response to CEO dismissal announcements in the next section.

3.5. Event study of CEO turnover

Given that we find evidence that some of the CEO dismissals after decimalization are driven by investor short-termism, we anticipate that the stock market response to the announcements of CEO dismissals driven by short-termism would be negative. Hence, in this subsection we run an event study of CEO turnover. We use the Fama-French 4 factor (market, size, book to market, and momentum) model as the asset pricing model to generate the expected daily return. We set [-150,-31] trading days relative to the first announcement date of a CEO turnover as the estimation window. To determine the cleanest investor response to the CEO dismissal, we remove the samples of CEO turnover that were confounded by major corporate events, captured by our exhaustive list from the databases. We start with 728 forced CEO turnovers from 1992 to 2009. The contaminating events are mergers and acquisitions (SDC Platinum), earnings announcements (IBES), restatements (GAO data augmented by the restatement data used in Meschke and Kim (2011) and (Fahlenbrach, Low, and Stulz, 2010), and class action lawsuits (Stanford Lawsuit Clearing House database). For the CEO dismissal announcements confounded by earnings announcements and merger announcements, we remove the observations if the merger or earnings announcements took place 15 calendar days before or after the CEO turnover announcement date. We also follow stricter rules in removing the CEO

dismissals that are potentially associated with accounting restatements or class action lawsuits. If these events took place two years before or after the CEO dismissal, we remove the CEO turnover observation. Using this procedure, we are left with 373 forced CEO turnover observations. In addition, to examine whether the investor response was any different after decimalization, we split the sample into before versus after decimalization. Lastly, to investigate when the investors started to respond to the announcement or information leakage of a CEO dismissal, we start to accumulate abnormal returns from the tenth trading day prior to the event date. We report the ACAR from the 10^{th} trading day before the announcement date up until the respective relative trading day (t) in Table 3.7 (and for graphical illustration, see Figure 3.5).

To test the statistical significance, we use two different t-statistics. The first is the t-statistic by Patell (1976), which assumes cross-sectional independence in abnormal returns and no event-induced change in volatility. We also show more conservative t-statistics by Boehmer, Musumeci, and Poulsen (1991) which allow for an event-induced change in volatility. We find that the price starts to move ten trading days before the actual announcement. Interestingly, while investor response to a CEO dismissal is statistically insignificant with a weakly positive drift before decimalization, investor response to a CEO dismissal is permanently negative and significant (by Patell's t-statistics) after decimalization with a magnitude of -1%~-1.5%.[6] Figure 3.5 shows the graphical illustration of abnormal returns around the forced CEO turnover announcement day.

The mixed result is in itself consistent with existing literature. Chang, Dasgupta, and Hilary (2010), Reinganum (1985), and Warner, Watts, and Wruck (1988) find insignificant

[6] The t-statistics by Boehmer, Musumeci, and Poulsen (1991) are marginally significant, which, again, indicates that a subgroup of forced CEO turnover after decimalization receives negative investor response.

investor response to CEO dismissals. The usual explanation is that the stock market already reflects the expectation that poorly performing CEOs would be fired long before the actual announcements. We find a marginally positive spike and reversal surrounding the day of an announcement (or the next day for CEO turnover after decimalization). Denis and Denis (1990) find a significant positive response to CEO dismissals. Khanna and Poulsen (1995) find a significant negative response to forced CEO turnover for distressed firms that scapegoat the CEOs. Hermalin and Weisbach (1998) predict that CEO dismissals would receive a negative investor response if the CEO was fired based on private information.

One might argue that the period after decimalization coincides with the post-Sarbanes Oxley (SOX hereafter) period where many companies were found to have problematic accounting and were sued for corporate fraud. Hence, one may suspect that the CEO dismissals in the sample after decimalization were based on negative private information. However, our observations are clean of such accounting restatements or lawsuits over *four years* centered at the event date. Therefore, it is difficult to argue that a negative stock price response to an announcement of a CEO dismissal is driven by private information after SOX. One might argue that some of the CEO dismissal after SOX signaled that the incumbent CEO was not competent enough to comply with the tougher standards for reporting and disclosure. However, such signals would be more apparent for CFO dismissals than for CEO dismissals as in Burks (2010). Rather, the result suggests that a part of these CEO dismissals were suboptimal decisions. Based on our study thus far, one of the possible drivers of the negative response to CEO dismissals after decimalization could be a myopic decision of the board to fire the CEO as a way of stopping the selling pressure from transient institutional investors. To analyze further, we run multiple

regressions using CARs of different event windows as our dependent variables in the next subsection.

3.5.1 CAR Regressions

In this subsection, we use a multiple regression approach to analyze the reason for the changing pattern of the stock price response to CEO transitions. The empirical model is as follows:

$$\begin{aligned}\mathrm{CAR} = {} & \beta_0 + \beta_1 \%\mathrm{TRA}_t + \beta_2 1\{\mathrm{AD}\} + \beta_3 1\{\mathrm{EPS} < 0\} + \beta_4 1\{\mathrm{AD}\} \\ & * \%\mathrm{TRA}_t + \beta_5 1\{\mathrm{EPS} < 0\} * \%\mathrm{TRA}_t \\ & + \beta_6 1\{\mathrm{AD}\} * \%\mathrm{TRA}_t * 1\{\mathrm{EPS} < 0\} + \beta_7 1\{\mathrm{AD}\} * \%\mathrm{DED}_t \\ & + \beta_8 1\{\mathrm{EPS} < 0\} * \%\mathrm{DED}_t + \beta_9 1\{\mathrm{AD}\} * \%\mathrm{DED}_t \\ & * 1\{\mathrm{EPS} < 0\} + \beta_{10} 1\{\mathrm{AD}\} * \%\mathrm{QIX}_t + \beta_{11} 1\{\mathrm{EPS} < 0\} \\ & * \%\mathrm{QIX}_t + \beta_{12} 1\{\mathrm{AD}\} * \%\mathrm{QIX}_t * 1\{\mathrm{EPS} < 0\} \\ & + \beta_{13} 1\mathrm{YrStkPerf} + \beta_{14} 1\{\mathrm{Outsider}\} + \beta_{15} \log(\mathrm{MVE})_t \\ & + \beta_{16} \mathrm{BEME} + \beta_{17} \sigma_{\mathrm{idio}} + \beta_{18} \mathrm{NewsNegative} \\ & + \beta_{19} \mathrm{NewsPositive} + \varepsilon\end{aligned}$$

where CAR is the cumulative abnormal return, %TRA is the ownership by transient institutions, %DED is the ownership by dedicated institutions, %QIX is the ownership by quasi-indexer institutions, 1{AD} is a dummy variable that is one if the CEO turnover took place after decimalization, 1{EPS<0} is a dummy variable that is one if the EPS is negative or zero otherwise, 1YrStkPerf is the stock return over the fiscal year ended before the CEO turnover, and 1{outsider} is the dummy variable that is one if the new CEO is an outsider. The elimination of CEO turnover observations that are driven by private information by utilizing exhaustive list of database is destined to be incomplete. Therefore, for the remaining unconfounded CEO turnover observations used in the regression, we control for the linguistic tone of news articles about the company over the different event windows to control for the qualitative information that is not captured by conventional database. We obtain all the news articles of the event set in Factiva, where the sources of the news are the Wall Street Journal and the Dow Jones Newswires. A negative/positive word count is done by referring to the financial words dictionary by Loughran and McDonald (2011). Following Tetlock (2007, 2010), News Negative is the standardized measure of negativity in the linguistic tone of news articles, and is constructed as follows:

$$NewsNegative = \frac{\%Negative - \mu_{Negative}}{\sigma_{Negative}}$$

$$\%Negative = \frac{\sum_{t=-10}^{T} \sum_{i=1}^{a} \#NegativeWords_{it}}{\sum_{t=-10}^{T} \sum_{i=1}^{a} \#Words_{it}}$$

$\mu_{Negative}$ is the average %Negative over the estimation window of a one-year period that stops at eleven calendar days prior to an event date. We divide the estimation window into

non-overlapping segments, where the segment length is the same as the length of the event window. Then, we obtain the %Negative for each segment. Across all the segments, we then compute the mean ($\mu_{Negative}$) and standard deviation ($\sigma_{Negative}$). We do the same for positive words. Overall, we collect 1,038 news articles over the event window of [-10,0] calendar days, and 8,776 news articles over the estimation window for unconfounded forced CEO dismissals.

Table 3.8 shows the CAR regression result of forced CEO turnover. The event window of the dependent variable in the first column is [-1,+1], which is 3 trading days around the announcement date. Second column, we use CAR [-1, 0], third column we use CAR [0, 1] for our dependent variable. The event window of the dependent variable of the fourth column is [0] , which is the announcement date. Columns (5) – (8), we use the same dependent variables as in columns (1) – (4) but the only difference is that linguistic tone of the article is controlled in columns (5) – (8).

Overall, a CEO dismissal may signal that the problem of the company is bigger than what the incumbent CEO could handle. However, shareholder response is more positive and cancels the negative effect if one of three conditions exist: if the prior idiosyncratic volatility was high; if book to market was high (more distressed); or if dedicated or quasi-indexer ownership was high before decimalization. The last finding may imply that before the decimalization, shareholders thought the CEO dismissal decision was better when there exists non-transient institutional investors. On the other hand, generally forced CEO turnover announcement news showed unfavorable response by the stock market after the decimalization as can be seen from negative and significant coefficient on 1{AD}. Moreover, after decimalization, CEO dismissals under pressure of transient investors in response to negative short-term performance received a

negative stock market response, as can be seen by the negative and significant coefficient of %TRA*1{EPS<0}*1{AD}. In the meantime, after the positive shock in the stock market liquidity, CEO dismissals that were under the pressure of dedicated institutions with response to the negative short-term performance receives a significant and positive shareholder response. These results may suggest that after the stock market liquidity improved, shareholders respond negatively of transient institutional investors existence in association with negative EPS dummy because shareholders believe that the dismissal decision was short-term oriented, while shareholders respond positively to dedicated investors' decision on CEO dismissal associated with inferior short-term performance because stock market believes that this decision making was not short-term oriented and indeed a right decision of a CEO dismissal. McCahery, Sautner, and Starks (2011) document that any activist movement of institutional investors does not always depend on the investment horizon of the company, and 80% of the institutions simply sell off their ownership of the company as a way of demonstrating their dissatisfaction with poor management. It seems that the selling off of stock by transient investors positively influenced the governance of firms before decimalization, but that selling pressure by transient investors became excessive with the exogenous positive shock in stock market liquidity. The regression result supports our conjecture that the short-termism-driven CEO dismissals triggered by transient institutions with inferior short-term performance account for the negative investor response to the announcements of CEO dismissals after decimalization.

3.6. R&D margin and accounting performance after CEO dismissal

We start our analysis in this section with the change in the R&D margin after a CEO turnover. We then move on to analyze the change in overall operating performance after a CEO dismissal. To study the R&D margin subsequent to forced CEO turnover, we focus on the unconfounded CEO dismissal observations from Section 2.3, because they are the cleanest sample of forced CEO turnover. We also need to clarify the time line of the event. After the end of fiscal year t, the CEO is dismissed, and then comes the end of a new fiscal year t+1 with a new CEO. Subsequently, the end of the next fiscal year t+2 comes. Our research question is whether high ownership by transient institutions in the fiscal year end of t significantly affects the R&D spending in the fiscal year end of t+2, because the R&D spending in year t+1 is not yet fully under the control of the new CEO. Moreover, the well-known "big bath" theory of accounting (Moore, 1976) predicts that most one-time charges take place in the first year (t+1) of new CEOs, because they can attribute the loss to the dismissed CEO. In contrast, under high pressure from myopic investors, the new CEOs would have more incentive to look good in the first full fiscal year of operation (t+2) because of several reasons. First, by definition, transient institutional investors are the ones who look for short-term earnings at the expense of long-term value (Bushee, 1998). Therefore, given that the new CEO has to satisfy the impatient myopic investors, he or she would have to sacrifice long term investment to deliver higher numbers in accounting performance. Second, CEO power is weaker in the earlier period of his or her tenure (Hermalin and Weisbach, 1998). Given that the Bayesian learning about new CEO's ability takes place mostly in the early period of tenure, and given that the new CEO has career concerns (Holmstrom, 1998) to satisfy the myopic institutional investors by delivering higher current

earnings, the new CEO would have more incentive to sacrifice R&D margin and increase the profit margin at the earlier period of his/her tenure. At the incidence of heightened criticism in 2010 to replace Vikram Pandit, who had been appointed as the CEO of Citigroup in 2008, one journalist of Bloomberg Businessweek, Kevin Kelly, argued as follows, which shows the degree of pressure to the new CEO to deliver the result early in the tenure:

> *Is this what has it come to? A talented engineer and financier reportedly hired at a cost of $165 million, promoted to chief executive, then just over a year later reduced to begging for more time to do his job. The patterns repeat. Yahoo! CEO Carlos Bartz had been criticized for not lifting that company's fortunes. Bartz… has only held her jobs for two years. … [T]he desire to quickly weed out poor performers is admirable, but the excesses have created a distressing side effect:"short-termism."*

Therefore, the new CEO may significantly reduce the R&D margin in (t+2) and significantly increase operating performance on the books if the company has high ownership by transient institutions in year t. Our regression models are as follows:

$$\Delta\left[\frac{\text{R\&}D}{\text{Sales}}\right]_{t+2} = \beta_0 + \beta_1 \%\text{TRA}_t + \beta_2 1\{\text{AD}\} + \beta_3 1\{\text{AD}\} * \%\text{TRA}_t + \beta_4 \left[\frac{\text{R\&}D}{\text{Sales}}\right]_t + \beta_5 \log(\text{MVE})_t + \beta_6 \sigma_{\text{idio}} + \beta_7 1\{\text{Outsider}\} + \vec{\gamma}\overrightarrow{1\{\text{ındustry}\}} + \varepsilon$$

$$\Delta \mathrm{ROA}_{t+2} = \beta_0 + \beta_1 \%\mathrm{TRA}_t + \beta_2 1\{\mathrm{AD}\} + \beta_3 1\{\mathrm{AD}\} * \%\mathrm{TRA}_t + \beta_4 \mathrm{ROA}_t + \beta_5 \log(\mathrm{MVE})_t + \beta_6 \sigma_{\mathrm{idio}} + \beta_7 1\{\mathrm{Outsider}\} + \vec{\gamma} \overrightarrow{1\{\imath \mathrm{ndustry}\}} + \varepsilon$$

where $\Delta \left[\frac{\mathrm{R\&}D}{\mathrm{Sales}}\right]_{t+2} = \left[\frac{\mathrm{R\&}D}{\mathrm{Sales}}\right]_{t+2} - \left[\frac{\mathrm{R\&}D}{\mathrm{Sales}}\right]_{t+1}$, which is the change in R&D margin over year t+1 to t+2, and $\Delta \mathrm{ROA}_{t+2} = \mathrm{ROA}_{t+2} - \mathrm{ROA}_{t+1}$, which is the change in ROA over year t+1 to t+2; 1{AD} is the dummy variable that is one if the CEO dismissal took place after decimalization; %TRA is the ownership by transient institutions; $\log(\mathrm{MVE})_t$ is the size proxy, which is the log of the market value of equity at the end of fiscal year t; σ_{idio} is the idiosyncratic volatility computed using the Fama French 4 factor model over the fiscal year t; and 1{Outsider} is the dummy variable that is one if the new CEO is an outsider. We use industry fixed effects.

The results in Table 3.9 confirm our prediction. The coefficient of the interaction between the after decimalization dummy and the ownership of transient institutions is negative and significant in the R&D margin regression, and positive and significant in the ROA regression. Therefore, it suggests that the new CEOs are more likely to reduce the R&D margin and increase the operating performance in the accounting books if the former CEO was more likely to be fired under pressure of myopic institutional investors. The positive and significant coefficient of the after decimalization dummy suggests that the newly appointed CEOs are now increasing the R&D investments after the improvement of market efficiency triggered by a

positive liquidity shock. The results are consistent with Bereskin and Hsu (2011) in the sense that newly appointed CEOs are more likely to invest more to strengthen innovation. The coefficient of the R&D margin (ROA) in the regression of change in the R&D margin (change in ROA) is negative and significant, which indicates some mean reversion.

3.7. Conclusion

In this paper, we find evidence that the positive liquidity shock in the stock market in 2001 triggered dual effects in terms of short-termism in the context of CEO dismissals. For the firms with high ownership by dedicated institutions, we find that the shareholders became more long-term oriented when deciding on CEO removal, as predicted by Maug (1999), Edmans (2009), and Edmans and Manso (2011). However, for the firms with high ownership by transient institutions, we find that the shareholders became more short-term oriented in firing the CEO. Consequently, firms that fired CEOs under the selling pressure of short-term oriented institutions significantly reduced the R&D margin to increase operating performance on the accounting books in the short-run. Our event study reveals that stock market investors see through such pressure and respond negatively to short-termism-driven CEO turnover. Parrino, Sias, and Starks (2003) find that institutions that engage in momentum trading are the ones that significantly sell their stocks due to dissatisfaction with the management before a forced CEO turnover. We take it several steps further. We find that CEO turnover driven by short-termism are suboptimal, because they discourage the future CEOs from investing in long-term R&D investments.

With exogenous positive liquidity shock of decimalization accompanied by increased usage of algorithmic trading, one could argue that the market became more efficient and institutional investors are now encouraging public companies to invest more in a long-term perspective. Our evidence surrounding forced CEO turnover shows that the impact of liquidity on short-termism also significantly depends on what kind of institutional investors a company has as its investor base.

Dikoli, Kulp, and Sedatole (2009) start their analysis by assuming "transient investors create implicit incentives for CEOs to over-allocate effort toward improving current earnings, potentially at the expense of creating long-term value." Our paper is the first to find direct evidence of what prior researchers had assumed in the first place. Helwege, Intintoli, and Zhang (2011) find substantial activist movements by institutional investors surrounding forced CEO turnover, which is at odds with previous findings of "voting with their feet" (Parrino, Sias, and Starks 2003). Our finding may give meaningful reconciliation between the two. Dedicated institutions now accumulate more ownership from 6 to 4 quarters before a forced CEO turnover when liquidity is good (after decimalization). As Maug (1999) points out, better stock liquidity seems to provide more flexibility to the dedicated institutional investors to accumulate more ownership to actively influence the firm's governance.

We should be careful in drawing the conclusion, because of the endogeneity of institutional ownership. In an unreported exercise, we used Bushee (1998) model to predict the ownership of transient, dedicated, and quasi-indexer institutions, respectively as a way of two-stage least squared model. Simple Hausman test result suggested that we cannot reject the null that the institutional ownerships are exogenous. Still, it is obvious that different kinds of institutional investors have different preferences of firms in the first place (Bushee, 2001). In the

future, we plan to run simultaneous equation models. We also plan to run the same CEO turnover regression with “residual” institutional ownerships.

CHAPTER 4

CONCLUSION

Chapter 2 provides evidence that banker directors, especially the affiliated ones, are sensitive to firm performance when removing CEOs and paying CEO equity compensation. That is, firms with relatively more affiliated banker directors are more likely to fire CEOs and cut CEO equity compensation when firm prior year's performance was inferior compared to the industry median. Moreover, we find that stock market reacts favorably to forced CEO turnover announcement when banker directors are present. This finding implies that banker directors' decision on firing a CEO is actually seen as positively by shareholders. This positive stock market reaction to forced CEO turnover news is particularly true when performance is poor prior year to the CEO turnover with banker directors' presence on board. If performance was poor prior year with banker directors on the board, forced turnover announcement is perceived to be more positive. Besides, firm's post performance after the CEO turnover increases as there are more commercial bankers on the board and the result is stronger when firm was experiencing poor accounting performance or when firm's risk was high prior year to the CEO turnover. This result suggests that bankers' existence on board helps firm to revive faster than for firms without bankers, possibly by providing appropriate financial advice and monitoring.

In the meantime, affiliated bankers are sensitive to risk measure as well when deciding on CEO's dismissal unlike other independent directors. Such risk-sensitive driven forced CEO turnover announcement news is not perceived as positively by shareholders for firms with banker

directors on the board. This may imply that banker director's effort to reduce downside risk by removing CEOs when firm's risk is high is not perceived positively by the shareholders. Also, we find that affiliated banker directors cut CEO compensation when firm's risk increases. Risk sensitiveness to CEO pay holds for both equity and cash compensation, indicating that affiliated bankers are very concerned with firms' volatility.

In addition, we find that banker's appointment on board is seen favorably for firms who are experiencing cash flow problems or who have high credit risk. Particularly, the affiliated banker's appointment to the board is more favorable when firm experienced an inferior stock performance during prior year. This stock market reaction may indicate that bankers are needed and welcomed by those weak cash flow firms or high risk firms because they are expected to provide benefits with their financial expertise and perhaps enhanced monitoring.

In sum, Chapter 2 findings suggest that banker director's monitoring role on CEOs' behavior is tougher than other non-banker directors but may be aggressive in terms of risk as well. We provide evidence that affiliated bankers have the most incentive to monitor, which is in line with shareholders' interests; but when firm's risk increases, that is the time when affiliated bankers diverge from shareholders' interests and focus on reducing firm's risk, which is not in line with shareholders' interests.

On the other hand, in Chapter 3, we find direct evidence that better stock liquidity seems to provide more flexibility to the dedicated institutional investors to accumulate more ownership to actively influence the firm's governance as Maug (1999) points out. However, for firms with more ownership by impatient institutional investors CEO turnover became more myopic. In fact, firms that fired CEOs under the selling pressure of short-term oriented institutional investors have significantly reduced the long-term investment to increase short-term operating

performance. These findings suggest that CEO turnover driven by short-termism (via impatient institutional investors' affect) is suboptimal since they discourage the future CEOs from investing in long-term R&D investments.

Moreover, our event study reveals that shareholders possibly see through such pressure by short-term oriented institutional investors and respond negatively to CEO turnover after the period of decimalization, which have increased the stock market liquidity.

In sum, Chapter 3 findings suggest that impact of liquidity has separated the effect of different types of institutional investors more drastically. That is, increased liquidity shock separated myopic investors from dedicated investors drastically and such effect is observed via *more* short-termism driven CEO turnover for firms with transient investors and *less* short-termism driven CEO removal decisions for firms with dedicated investors.

Overall, both chapters finding suggest that different characteristics of board of directors or institutional investors do matter in enhancing corporate governance quality. Previous literature found no consensus of having benefits/ costs of having commercial bankers or of institutional investors with enhanced stock market liquidity. This dissertation provides the reconciliation: *types* matters depending on the events. In other words, affiliated bankers do enhance corporate governance via providing effective monitoring role but they diverge from shareholders' interests when firm's risk increases; transient institutional investors become more impatient with short-term performance of the firm with increased stock market liquidity, leading CEOs to be fired more based on short-term performance.

Board of directors with financial expertise, such as commercial bankers, and institutional investors are becoming more relevant and important these days (see Kim, 2012; McCahery et al, 2011). However, academic literature has not yet find consensus on their effect on corporate

governance. By examining CEO turnover decisions and CEO compensation, we provide valuable insights on their effect and contribute to the corporate governance literature.

Further research on different types of board of directors would be interesting. For example, recent movement in the European Union movement to mandate a minimum percentage of women in the board. It would be interesting to see how such regulation would impact other types of board of directors or institutional investors and CEO turnover in particular. In addition, examination of negative exogenous shock to stock market liquidity would be interesting to see how it would impact institutional investors' behavior as well as board of directors' decision on CEO turnovers.

APPENDICES

APPENDIX A

Section A. Variable Definitions (alphabetical order) for Chapter 2

1 {High CEO ownership}	Dummy variable, where the value equals 1 when CEO owns more than 5% of ownership and zero otherwise
1 yr excess stock return	Annualized monthly stock returns subtracted by CRSP value-weighted index [return-CRSP value weighted index]=1 year excess stock return
1 yr stock perf. t-1	Lagged 1 yr stock perf.
1{ CEO retirement age }	Dummy variable, where the value equals 1 when there CEO age is between 63 and 65 years old, and zero otherwise
1{AICB}	indicator variable, taking a value one if affiliated banker director is appointed and zero otherwise.
1{CBD}	Dummy variable, where the value equals 1 when there is a commercial banker on the board
1{CEO outsider succession}	Dummy variable, where the value equals 1 when successive CEO was an outsider
1{Chairman CEO}	Dummy variable, where the value equals 1 when CEO is also a chairman and zero otherwise
1{NI<0}	Dummy variable, where the value equals 1 when net income is negative
BE/ME	book-to-market equity, calculated as = ceq / (prcc_f * csho)
BE/ME t-1	Lagged book-to-market equity
Cash flow	Defined as CF/k ; calculated as = sum(ib, dp) / lagppent;, where lagppent is lagged PPENT from Compustat data
Cash flow $_{t-1}$	Lagged Cash flow

CEO tenure	Tenure of a CEO , is measuring how long a CEO has been working in that firm
Fraction of affiliated banker director	Affiliated commercial banker director percentage. Affiliatedness follows Guner, Malmendier and Tate (2011)
Fraction of banker director	Commercial banker director percentage
Fraction of nonaffiliated banker director	Nonaffiliated commercial banker director percentage; calculated as = CBD % - aff.CBD%
Fraction of non-banker director	Non Commercial banker director percentage; calculated as = indep.dir.% - CBD %
Fraction of outside director	Independent director percentage
Idiosyncratic risk	“sigma” = RMSE of running a market model using EVENTUS (where estimation length =256) (but for missing sigma, replaced with RMSE where estimation.length=20) ~ following Bushman et al. (2010)
ind.rel.leverage	industry median adjusted leverage, where leverage is defined as total liabilities (= dlc + dltt from Funda) dvided by (dlc+dltt+prcc_f*csho)
KMV Expected Default risk	KMV Estimated default frequency from Moody's data
log(at) t-1	Lagged ln(total assets)
log(board size)	Ln(board size), where board size is number of board members
log(cash compensation)	natural log of 1+sum(salary, bonus) from Anncomp table of Execucomp data
log(equity compensation)	natural log of 1+equity, where equity is sum of stock pay and option pay
Log(Total Assets)	Natural log(total assets), where total assets is AT variable from Compustat data
log(total compensation)	natural log of 1+tdc1 from Anncomp table of Execucomp data

option pay	prior to year 2006, OPTION_AWARDS_BLK_VALUE is used and 2006 onwards, OPTION_AWARDS_FV is used for determining option pay from Anncomp table of Execucomp data
Raw ROA	ROA = oibdp/at (using COMPUSTAT items)
ROA (ind.adj.)	Industry median adjusted ROA , where ROA = oibdp/at (using COMPUSTAT items) and industry is defined using Fama-French 49 industry classification.
ROA (ind.adj.) t-1	Lagged industry median adjusted ROA
ROA risk	this is an accounting-bas risk measure where it is used in Bushman et al. (2010) paper.; Standard deviation of prior 5 years of quarterly ROA , where ROA is calculated as oibdpq / atq from fundq table of Compustat data; Before calculing for standard deviation, industry median is adjusted; calculated by merging 5 previous quarterly data of reloroaqmed_ff49current from datadate and calculated standard deviation using proc means std
stock pay	prior to year 2006, RSTKGRNT is used and 2006 onwards, STOCK_AWARDS_FV is used for determining stock pay from Anncomp table of Execucomp data
Stock return risk	Standard deviation of prior 365 days of daily stock returns ; calculated by merging daily stock returns of prior 366 days from datadate and calculated standard deviation using proc means

Section B. Link between BoardEx and Compustat databases and identifying executives

The problem with BoardEx data is that only less than 7,185 firm names out of 601,442 organization names are matched with the Compustat database in a one-to-one basis through the CIK number. One slightly different name spelling of the same company would fail to have a matching CIK. Since BoardEx is only partially merged with Compustat, I ran exhaustive fuzzy text/string matches to find firm identification numbers from all the databases to which the school subscribes. I ran multiple rounds of string matching using the following databases in a recursive manner in the sense that whatever is left over from the current matching round with a certain database is used again in the next matching round with the next database. These databases include Compustat North America, Compustat Global, CRSP, Dealscan, Bank Regulatory Database by Chicago FED (find Bank Holding Company Names), Jay Ritter's IPO Adviser ranking table, SDC Platinum (M&A/IPO adviser names). I use the compged function of SAS, which is the most sophisticated linguistic string match technique. I obtain identification numbers for 40,434 organization names in BoardEx from any of the databases listed above, and I am then able to identify whether the company is a commercial bank or investment bank. For these 40,434 matched names, I hand-checked whether the two company names (one from BoardEx and the other from one of the listed databases) really are the same business identity using BusinessWeek and Hoovers databases and then checking their websites. In checking whether the companies really are a bank holding company, I use the FDIC Bankfind database on their website. After this procedure, 39,370 of the BoardEx company names are matched with the ID numbers of one of the databases above[1]. Focusing on the GVKEYs, 27,035 unique GVKEYs are matched to 33,030 firm names in BoardEx, which is 4.6 times the number of initial matches through CIK.

[1] This number means that 6.55% different organization names in BoardEx are linked to standard databases. The reason for such a small matching result is that most of the organizations are non-profit organizations such as universities, clubs, government organizations, international organizations, etc.

Section C Variable definition for Chapter 3

$\%TRA_t$ is the percentage ownership by transient institutional investors.

$\%DED_t$ is the percentage ownership by dedicated institutional investors.

$\%QIX_t$ is the percentage ownership by quasi-indexer institutional investors.

R&D margin is the R&D expense dividend by sales in Compustat.

Rel.R&Dmar is the industry relative R&D margin of the company which involves subtracting the industry median (Fama French 49 industry group) from the R&D margin.

$1\{AD\}$ is the dummy variable that is one if the fiscal year is after 2001 (decimalization).

$1\{Forced\ CEO\ Turnover\}_{t+1}$ is the dummy variable that is one if the CEO was forced out in year t+1 and zero otherwise.

1yr Stk Perf. is the one-year stock performance over the fiscal year.

1{Outsider} is a dummy variable that is one if the new CEO is an outsider. A new CEO is classified as an outsider if he/she started to work for the company less than one year prior to the announcement of the departure of the incumbent CEO.

Log(MVE) is the market value of common equity as of the end of the fiscal year.

BEME is the book to market ratio as in Fama-French (1995).

News Negative is the standardized percentage of negative words (Loughran and McDonald (2010)) of news articles in the Wall Street Journal and Dow Jones Newswires over the calendar days around the announcement day of CEO dismissals. Please refer to the text for a more detailed explanation of the construction.

1{Retirement Age} is a dummy variable that is one if the CEO's age is between 63 and 66.

1{High Ownership} is a dummy variable that is one if the equity ownership of the CEO is more than 5%.

1{Chairman CEO} is a dummy variable that is one if the CEO also holds chairmanship of the board. The chairman information is obtained from Risk Metrics (IRRC).

1{Lawsuit} is a dummy variable that is one if there was a class action lawsuit filed against the company during the fiscal year according to Stanford Lawsuit Clearing House database

1{High bank debt} is a dummy variable that is one if the firms' aggregate bank loan facility amount from LPC Dealscan divided by the total assets is higher than the median of the fiscal year.

ROA is the operating income before depreciation divided by the total assets.

Rel.ROA is the industry relative ROA of the company which involves subtracting the industry median (Fama French 49 industry group) from the ROA.

Section D Classifying forced versus voluntary CEO turnover following Parrino (1997)

For each turnover event, we search corresponding newspaper articles in Factiva. A succession is classified as forced if the news articles report that the CEO is fired, forced, ousted, or departed due to unspecified policy differences. For the rest of the transitions, the CEO is considered to be forced out if the incumbent CEO is under the age of 60 and the news articles do not report the reason for the departure such as involving death, poor health, or accepting another position (elsewhere or within the firm). In addition, even though the CEO is said to have accepted a position outside the firm, if the firm is not a public company, but a private consulting business, the incidence is considered to be a forced turnover because the move is from a big public corporation (Execucomp firms are typically the top 1500 largest public firms in the US) to a smaller private company. However, moves to the federal or local government are not classified as forced. A "retirement" announcement of a CEO younger than 60 is considered to be a forced turnover if the succession plan was not announced at least six months prior to the actual transition. Even for departures that were classified as forced, we reclassify them as voluntary if the departure is due to some undisclosed personal or business reasons that are unrelated to the firm's activities. In total, we find 738 forced turnover and 2161 voluntary turnover over the sample period. (see Figure 3.6 for CEO turnover rate)

APPENDIX B

TABLES AND FIGURES FOR CHAPTER 2

Table 2.1
Sample distribution by year, industry, and number of firms with banker directors

The sample period is 1997-2008. Firm-years in our sample is an intersection of Execucomp, Boardex, Compustat and Crsp. The sample consists of 12,617 firm-years, 1,197 of which have commercial banker directors in their firm board. We use the Boardex data to identify banker directors on board. Industry classifications are based on the one-digit SIC code. The numbers in the parentheses are those firms who have at least one banker director on their boards.

	Industry										
Yr	1	2	3	4	5	6	7	8	9	10	**Total**
'97	0 (0)	0 (0)	0 (0)	1 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (0)	0 (0)	**2 (0)**
'98	0 (0)	0 (0)	0 (0)	4 (0)	0 (0)	0 (0)	1 (0)	0 (0)	2 (0)	0 (0)	**7 (0)**
'99	0 (0)	2 (1)	1 (0)	64 (11)	9 (3)	3 (1)	15 (3)	18 (3)	19 (1)	1 (1)	**132 (24)**
'00	5 (0)	41 (2)	15 (1)	484 (55)	124 (26)	39 (3)	108 (16)	175 (20)	164 (16)	4 (1)	**1,159 (140)**
'01	4 (0)	44 (3)	17 (1)	533 (54)	130 (30)	44 (4)	113 (13)	190 (23)	182 (11)	4 (1)	**1,261 (140)**
'02	3 (0)	48 (5)	18 (2)	547 (55)	141 (27)	42 (4)	113 (13)	200 (23)	191 (14)	4 (1)	**1,307 (144)**
'03	4 (1)	60 (1)	18 (1)	659 (56)	158 (35)	52 (7)	145 (13)	237 (30)	243 (15)	5 (1)	**1,581 (160)**
'04	5 (1)	60 (1)	21 (1)	695 (52)	162 (29)	46 (4)	148 (10)	237 (34)	244 (9)	5 (1)	**1,623 (142)**
'05	5 (1)	57 (1)	23 (0)	671 (44)	157 (26)	50 (4)	133 (12)	244 (25)	233 (8)	4 (1)	**1,577 (122)**
'06	4 (0)	63 (3)	20 (0)	672 (46)	159 (26)	48 (5)	140 (13)	275 (30)	237 (8)	4 (1)	**1,622 (132)**
'07	3 (0)	64 (4)	23 (0)	647 (43)	151 (25)	51 (3)	133 (14)	270 (27)	227 (8)	4 (0)	**1,573 (124)**
'08	1 (0)	31 (1)	14 (0)	349 (29)	88 (16)	22 (2)	31 (2)	132 (11)	102 (8)	3 (0)	**773 (69)**
Total	**34 (3)**	**470 (22)**	**170 (6)**	**5,326 (445)**	**1,279 (243)**	**397 (37)**	**1,080 (109)**	**1,978 (226)**	**1,845 (98)**	**38 (8)**	**12,617 (1,197)**

Industry 1: Agriculture, forestry, and fishing

Industry 2: Mining

Industry 3: Construction

Industry 4: Manufacturing

Industry 5: Transportation, Communications, Electric, Gas, and Sanitary Services

Industry 6: Wholesale Trade

Industry 7: Retail Trade

Industry 8: Finance, Insurance, and Real Estate

Industry 9: Services

Industry 10: Public Administration

Table 2.2
Summary statistics of firm characteristics / variables used

The sample period is 1997-2008. Firm-years in our sample is an intersection of Execucomp, Boardex, Compustat and Crsp. The sample consists of 12,617 firm-years, 1,197 of which have banker directors in their firm board. Firm characteristics are from Compustat and Crsp. CEO and board characteristics are from Boardex and Execucomp data. CEO compensation variables are from Execucomp data. *, **, and *** denote significance levels at 10%, 5%, and 1%, respectively. Test of difference shows p-value instead of test statistics. Detailed variable descriptions are in Appendix A Section A.

	Full Sample (N = 12617)			has Commercial Banker Director: A (N = 1197)			No Commercial Banker Director: B (N = 11420)		
	Mean	Median	Std.Dev	Mean	Median	Std.Dev	Mean	Median	Std.Dev
Firm Characteristics									
ln(at)	7.808	7.625	1.729	8.603	8.53	1.765	7.725	7.553	1.704
1 yr stock perf.	0.083	0.016	0.501	0.07	0.019	0.421	0.084	0.015	0.509
ROA (ind.adj.)	0.049	0.031	0.122	0.048	0.027	0.099	0.049	0.031	0.125
CF/k	-0.756	0.132	159.036	0.292	0.047	3.828	-0.866	0.142	167.159
Winsorized CF/k	0.548	0.132	1.93	0.355	0.047	1.427	0.569	0.142	1.96
BE/ME	0.465	0.431	1.344	0.513	0.461	0.396	0.46	0.429	1.407
Idiosyncratic volatility	0.023	0.02	0.012	0.02	0.018	0.01	0.023	0.02	0.012
Std.dev. of daily stock returns	0.026	0.023	0.014	0.023	0.02	0.011	0.026	0.023	0.014
Std.dev. of quarterly ROA	0.016	0.011	0.019	0.012	0.009	0.013	0.016	0.011	0.02
KMV EDF	0.88	0.142	3.025	0.519	0.124	1.969	0.918	0.143	3.112
Winsorized KMV EDF	0.862	0.142	2.835	0.508	0.124	1.792	0.899	0.143	2.92

Table 2.2 Continued-1

	Full Sample (N = 12617)			has Commercial Banker Director: A (N = 1197)			No Commercial Banker Director: B (N = 11420)		
	Mean	Median	Std.Dev	Mean	Median	Std.Dev	Mean	Median	Std.Dev
CEO & board characteristics									
CEO age	55.616	56	7.511	56.336	56	6.693	55.54	55	7.588
CEO tenure	7.873	5	7.721	6.761	5	6.72	7.989	5	7.81
1{CEO = chairman}	0.643	1	0.479	0.739	1	0.439	0.633	1	0.482
1 {CEO ownership >= 5%}	0.038	0	0.19	0.021	0	0.143	0.039	0	0.194
1{CEO outsider succession}	0.29	0	22.217	0.028	0	0.165	0.318	0	23.389
institutional ownership	0.708	0.742	0.201	0.651	0.664	0.197	0.714	0.751	0.2
Board members	9.545	9	2.695	10.791	11	2.655	9.406	9	2.663
ln(board size)	2.325	2.303	0.248	2.443	2.485	0.223	2.312	2.303	0.247
CEO Compensation characteristics									
ln(total compensation)	8.026	8.044	1.176	8.256	8.244	1.084	8.002	8.029	1.183
ln(cash compensation)	6.896	6.9	1.01	7.136	7.054	0.78	6.871	6.883	1.028
ln(equity compensation)	6.119	7.226	3.193	6.314	7.401	3.204	6.098	7.215	3.192
ln(PPS)	5.6	5.606	1.36	5.745	5.741	1.357	5.585	5.595	1.36
ln(Vega)	2.83	3.023	1.615	3.145	3.324	1.682	2.798	2.996	1.604
Director Variables									
Outside directors	0.831	0.875	0.175	0.818	0.846	0.155	0.832	0.875	0.177
Banker directors	0.011	0	0.038	0.115	0.1	0.058	0	0	0
Affiliated banker directors	0.001	0	0.012	0.012	0	0.039	0	0	0
Nonaffiliated banker directors	0.01	0	0.037	0.103	0.091	0.072	0	0	0

Table 2.2 Continued-2

	Test of difference (A-B)			
	t-test		Mann-Whitney z-test	
Firm Characteristics				
ln(at)	0	***	0	***
1 yr stock perf.	0.3501		0.5626	
ROA (ind.adj.)	0.6665		0.4147	
CF/k	0.8107		0	***
Winsorized CF/k	0.0001	***	0	***
BE/ME	0.1926		0.0083	***
Idiosyncratic volatility	0	***	0	***
Std.dev. of daily stock returns	0	***	0	***
Std.dev. of quarterly ROA	0	***	0	***
KMV EDF	0	***	0.0001	***
Winsorized KMV EDF	0	***	0.0001	***
CEO & board characteristics				
CEO age	0.0005	***	0.0001	***
CEO tenure	0	***	0	***
1{CEO = chairman}	0	***	0	***
1 {CEO ownership >= 5%}	0.0014	***	0.0014	***
1{CEO outsider succession}	0.7269		0.0257	**
institutional ownership	0	***	0	***
Board members	0	***	0	***
ln(board size)	0	***	0	***
CEO Compensation characteristics				
ln(total compensation)	0	***	0	***
ln(cash compensation)	0	***	0	***
ln(equity compensation)	0.0264	**	0.0001	***
ln(PPS)	0.0008	***	0.001	***
ln(Vega)	0	***	0	***
Director Variables				
Outside directors	0.0074	***	0	***
Banker directors	0	***	0	***
Affiliated banker directors	0	***	0	***
Nonaffiliated banker directors	0	***	0	***

Table 2.3
Likelihood of Forced turnover and banker directors

The sample consists of 12,591 firm-years in the 1997-2008 period. The dependent variable is forced turnover, defined as one if there is a forced turnover and zero otherwise. See Appendix A Section A for variable definitions. In Panel A, no interaction was performed. In Panel B, performance measured by industry median adjusted ROA is interacted with director percentage variables. In Panel C, risk measures are interacted with director percentage variables: for risk measures, standard deviation of daily stock performance during the past 1 year is used in Panel C.1, industry median adjusted standard deviation of quarterly ROA for the past 5 years is used in Panel C.2, idiosyncratic volatility is used in Panel C.3, and winsorized KMV Expected Default Frequency (KMV EDF) at (1, 99%) level is used in Panel C.4. Logit regressions are performed with industry and year dummies included in all specifications. *, **, and *** indicate the significance at the 10%, 5%, and 1% level, respectively. P-values are in parentheses. Standard errors are clustered at the firm level.

Panel A. No Interaction

Dep. variable: 1{forced CEO Turnover}	(1)	(2)	(3)	(4)
[A]: Fraction of outside directors	-0.122	-0.137	-0.11	-0.131
	(0.730)	(0.699)	(0.756)	(0.713)
[B]: Fraction of banker directors (BD)		1.131		
		(0.465)		
[C]: Fraction of affiliated BD			-12.935	-12.898
			(0.179)	(0.184)
[D]: Fraction of nonaffiliated BD				1.68
				(0.274)
1yr excess stock return	-1.184 ***	-1.186 ***	-1.185 ***	-1.187 ***
	(0.000)	(0.000)	(0.000)	(0.000)
idiosyncratic risk	16.014 ***	16.054 ***	15.893 ***	15.932 ***
	(0.000)	(0.000)	(0.000)	(0.000)
Size: log(Total Assets)	0.045	0.044	0.048	0.046
	(0.304)	(0.317)	(0.279)	(0.292)
1{CEO retirement age}	-0.895 ***	-0.898 ***	-0.895 ***	-0.899 ***
	(0.008)	(0.008)	(0.008)	(0.008)
CEO tenure	-0.038 ***	-0.037 ***	-0.038 ***	-0.038 ***
	(0.000)	(0.000)	(0.000)	(0.000)
1{Chairman CEO}	-0.427 ***	-0.43 ***	-0.424 ***	-0.427 ***
	(0.000)	(0.000)	(0.000)	(0.000)
1{High CEO ownership}	-0.02	-0.024	-0.018	-0.023
	(0.955)	(0.947)	(0.960)	(0.947)
constant	-29.859 ***	-29.821 ***	-28.388 ***	-28.337 ***
	(0.000)	(0.000)	(0.000)	(0.000)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 2.3 Continued

N	12591	12591	12591	12591
Pseudo.R2	0.071	0.071	0.072	0.072

Table 2.3 Continued

Panel B. Interaction with performance measure

Dep. Variable: 1{forced CEO turnover}	(1)		(2)		(3)		(4)	
	coeff	mfx	coeff	mfx	coeff	mfx	coeff	mfx
director variables								
[A]: Fraction of outside directors	-0.144	-0.003	-0.157	-0.003	-0.121	-0.002	-0.141	-0.003
	(0.689)	(0.674)	(0.665)	(0.673)	(0.737)	.	(0.697)	(0.699)
[B]: Fraction of banker directors (BD)			0.997	0.02				
			(0.546)	(0.564)				
[C]: Fraction of affiliated BD					-20.698 **	-0.406	-20.763 **	-0.408 *
					(0.044)	.	(0.043)	(0.076)
[D]: Fraction of nonaffiliated BD							1.468	0.029
							(0.381)	(0.393)
ROA (ind.adj.) * [A]	-1.364	-0.027	-1.372	-0.028	-1.421	-0.028	-1.41	-0.028
	(0.516)	(0.448)	(0.514)	(0.536)	(0.499)	.	(0.503)	(0.510)
ROA (ind.adj.) * [B]			-2.179	-0.044				
			(0.889)	(0.890)				
ROA (ind.adj.) * [C]					-242.638 ***	-4.76	-243.828 ***	-4.789 ***
					(0.000)	.	(0.000)	(0.008)
ROA (ind.adj.) * [D]							-0.492	-0.01
							(0.975)	(0.975)
controls								
ROA (ind.adj.)	0.396	0.008	0.414	0.008	0.456	0.009	0.45	0.009
	(0.847)	(0.845)	(0.840)	(0.841)	(0.824)	(0.764)	(0.827)	(0.827)
idiosyncratic risk	19.389 ***	0.391	19.401 ***	0.391 *	19.242 ***	0.377	19.251 ***	0.378 ***
	(0.000)	.	(0.000)	(0.070)	(0.000)	.	(0.000)	(0.004)
Size: log(Total Assets)	0.068	0.001	0.067	0.001	0.071	0.001	0.07	0.001
	(0.120)	.	(0.126)	(0.232)	(0.106)	.	(0.112)	(0.149)
1{CEO retirement age}	-0.93 ***	-0.013	-0.932 ***	-0.013 *	-0.928 ***	-0.013	-0.93 ***	-0.013 ***
	(0.006)	.	(0.007)	(0.083)	(0.006)	.	(0.007)	(0.007)
CEO tenure	-0.037 ***	-0.001	-0.037 ***	-0.001 *	-0.037 ***	-0.001	-0.037 ***	-0.001 ***
	(0.000)	.	(0.000)	(0.086)	(0.000)	.	(0.000)	(0.010)

Table 2.3 Panel B Continued

	(1)		(2)		(3)		(4)	
	coeff	mfx	coeff	mfx	coeff	mfx	coeff	mfx
1{Chairman CEO}	-0.405 ***	-0.009	-0.406 ***	-0.009 *	-0.404 ***	-0.008	-0.406 ***	-0.008 **
	(0.001)	.	(0.001)	(0.096)	(0.001)	.	(0.001)	(0.016)
1{High CEO ownership}	0.002	0	-0.003	0	-0.005	0	-0.012	0
	(0.995)	(0.995)	(0.993)	(0.993)	(0.990)	(0.990)	(0.972)	(0.972)
constant	-28.561		-28.03		-29.847 ***		-27.302 ***	
	.		.		(0.000)		(0.000)	
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	12591	12591	12591	12591	12591	12591	12591	12591
Pseudo.R2	0.054	0.054	0.054	0.054	0.055	0.055	0.055	0.055

Table 2.3 Continued

Panel C.1 Interaction with Risk measure					***Stock return risk***			
	(1)		(2)		(3)		(4)	
	coeff	mfx	coeff	mfx	coeff	mfx	coeff	mfx
director variables								
[A]: Fraction of outside directors	-0.8	-0.015	-0.786	-0.014	-0.763	-0.014	-0.763	-0.014
	(0.175)	.	(0.188)	(0.635)	(0.197)	(0.264)	(0.200)	(0.419)
[B]: Fraction of banker directors (BD)			-1.26	-0.023				
			(0.656)	(0.738)				
[C]: Fraction of affiliated BD					-49.422***	-0.884**	-49.428***	-0.881
					(0.000)	(0.043)	(0.000)	(0.310)
[D]: Fraction of nonaffiliated BD							0.211	0.004
							(0.942)	(0.943)
interactions								
Stock return risk * [A]	19.694	0.358	18.61	0.338	19.041	0.341	18.305	0.326
	(0.136)	.	(0.162)	(0.632)	(0.151)	(0.225)	(0.169)	(0.406)
Stock return risk * [B]			86.247	1.565				
			(0.290)	(0.647)				
Stock return risk * [C]					1160.12***	20.752**	1164.795***	20.77
					(0.000)	(0.033)	(0.000)	(0.303)
Stock return risk * [D]							53.41	0.952
							(0.541)	(0.599)
controls								
Stock return risk	-0.336	-0.006	0.237	0.004	-0.141	-0.003	0.342	0.006
	(0.975)	(0.975)	(0.983)	(0.983)	(0.990)	(0.990)	(0.975)	(0.975)
1yr excess stock return	-1.129***	-0.021	-1.127***	-0.02	-1.13***	-0.02**	-1.13***	-0.02
	(0.000)	.	(0.000)	(0.612)	0.000	(0.035)	(0.000)	(0.305)
ROA (ind.adj.)	-0.481*	-0.009	-0.483*	-0.009	-0.487*	-0.009	-0.485*	-0.009
	(0.067)	.	(0.067)	(0.624)	(0.064)	(0.151)	(0.067)	(0.364)
Size: log(Total Assets)	0.042	0.001	0.042	0.001	0.043	0.001	0.043	0.001
	(0.335)	.	(0.332)	(0.652)	(0.315)	(0.358)	(0.319)	(0.471)

Table 2.3 Panel C.1 Continued

	(1)		(2)		(3)		(4)	
	coeff	mfx	coeff	mfx	coeff	mfx	coeff	mfx
1{CEO retirement age}	-0.895***	-0.012	-0.897***	-0.012	-0.911***	-0.012**	-0.914***	-0.012
	(0.008)	.	(0.008)	(0.618)	(0.007)	(0.049)	(0.007)	(0.316)
CEO tenure	-0.04***	-0.001	-0.04***	-0.001	-0.04***	-0.001**	-0.04***	-0.001
	(0.000)	.	(0.000)	(0.613)	(0.000)	(0.047)	(0.000)	(0.312)
1{Chairman CEO}	-0.419***	-0.008	-0.423***	-0.008	-0.417***	-0.008*	-0.421***	-0.008
	(0.000)	.	(0.000)	(0.615)	(0.000)	(0.059)	(0.000)	(0.317)
1{High CEO ownership}	-0.025	0	-0.028	0	-0.023	0	-0.029	-0.001
	(0.943)	(0.942)	(0.937)	(0.937)	(0.948)	(0.947)	(0.935)	(0.934)
constant	-28.096***		-28.088		-27.628***		-27.597***	
	(0.000)		.		(0.000)		(0.000)	
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	12590	12590	12590	12590	12590	12590	12590	12590
Pseudo.R2	0.072	0.072	0.073	0.073	0.074	0.074	0.074	0.074

Table 2.3 Continued

Panel C.2 Interaction with RISK measure	**ROA risk**							
	(1)		(2)		(3)		(4)	
	coeff	mfx	coeff	mfx	coeff	mfx	coeff	mfx
director variables								
[A]: Fraction of outside directors	-0.418	-0.008	-0.437	-0.008	-0.391	-0.007	-0.414	-0.008
	(0.300)	.	(0.280)	(0.664)	(0.334)	(0.563)	(0.305)	.
[B]: Fraction of banker directors (BD)			0.761	0.014				
			(0.664)	(0.748)				
[C]: Fraction of affiliated BD					-38.858***	-0.723	-38.83***	-0.72
					(0.000)	(0.477)	(0.000)	.
[D]: Fraction of nonaffiliated BD							1.578	0.029
							(0.371)	.
interactions								
ROA risk * [A]	10.639	0.201	10.827	0.205	10.389	0.193	10.506	0.195
	(0.128)	.	(0.126)	(0.650)	(0.143)	(0.517)	(0.138)	.
ROA risk * [B]			13.97	0.264				
			(0.796)	(0.821)				
ROA risk * [C]					1483.65***	27.594	1478.9***	27.443
					(0.004)	(0.483)	(0.003)	.
ROA risk * [D]							-0.567	-0.011
							(0.993)	(0.993)
controls								
ROA risk	-6.18	-0.117	-6.372	-0.12	-6.131	-0.114	-6.162	-0.114
	(0.306)	.	(0.304)	(0.666)	(0.318)	(0.558)	(0.318)	.
1yr excess stock return	-1.254***	-0.024	-1.256***	-0.024	-1.25***	-0.023	-1.253***	-0.023
	0.000	.	0.000	(0.635)	(0.000)	(0.473)	(0.000)	.
ROA (ind.adj.)	-0.606**	-0.011	-0.604**	-0.011	-0.624**	-0.012	-0.616**	-0.011
	(0.032)	.	(0.032)	(0.643)	(0.028)	(0.493)	(0.030)	.
Size: log(Total Assets)	0.021	0	0.02	0	0.023	0	0.022	0
	(0.638)	(0.558)	(0.652)	(0.743)	(0.601)	(0.672)	(0.617)	.

Table 2.3 Panel C.2 Continued

	(1)		(2)		(3)		(4)	
	coeff	mfx	coeff	mfx	coeff	mfx	coeff	mfx
1{CEO retirement age}	-0.905***	-0.012	-0.908***	-0.012	-0.905***	-0.012	-0.909***	-0.012
	(0.008)	.	(0.007)	(0.640)	(0.007)	(0.481)	(0.007)	.
CEO tenure	-0.039***	-0.001	-0.039***	-0.001	-0.039***	-0.001	-0.039***	-0.001
	(0.000)	.	(0.000)	(0.637)	(0.000)	(0.477)	(0.000)	.
1{Chairman CEO}	-0.463***	-0.009	-0.465***	-0.009	-0.46***	-0.009	-0.463***	-0.009
	(0.000)	.	(0.000)	(0.635)	(0.000)	(0.476)	(0.000)	.
1{High CEO ownership}	-0.024	0	-0.027	-0.001	-0.017	0	-0.023	0
	(0.947)	(0.947)	(0.940)	(0.940)	(0.962)	(0.961)	(0.950)	(0.948)
constant	-27.357***		-27.33***		-28.39***		-28.34***	
	(0.000)		(0.000)		(0.001)		0.000	
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	12017	12017	12017	12017	12017	12017	12017	12017
Pseudo.R2	0.068	0.068	0.068	0.068	0.07	0.07	0.07	0.07

Table 2.4
Cumulative Abnormal Returns (CARs) around the forced turnover announcement date

The sample period is 1997-2008. The table reports cumulative abnormal returns (CARs); returns are calculated based on market-model using returns from -150 to -31 days from the CEO turnover announced date and uses CRSP value-weighted index as a proxy for the market portfolio. CAR is calculated over the (-t,+t) window, where t=0 is the day of CEO turnover announcement. Confounding events such as mergers and acquisitions, earnings announcements, restatements, and class action lawsuits within +1/-1 day of the CEO turnover announcement day are excluded from the sample. In Panel A, the sample consists of 317 firms, which experienced forced CEO turnovers. In Panel B, the sample is divided on the basis of commercial-banker-director's existence. *, **, and *** indicate the significance at 10%, 5%, and 1% level respectively. P-values are shown in each test columns.

Panel A. Summary Statistics	**CAR (-1, +1) sample (N = 317)**			has Commercial Banker Director: A (N = 31)			No Commercial Banker Director: B (N = 286)			Test of difference (A-B)	
	Mean	Median	Stdev	Mean	Median	Stdev	Mean	Median	Stdev	t-test	Mann-Whitney z-test
Firm Characteristics											
ln(at)	7.591	7.44	2.041	8.826	9.256	1.92	7.457	7.276	2.012	0.0003***	0.0003***
1 yr stock perf.	-0.105	-0.151	0.476	-0.173	-0.159	0.231	-0.098	-0.15	0.495	0.4046	0.6089
ROA (ind.adj.)	0.024	0.025	0.192	0.037	0.007	0.127	0.022	0.025	0.198	0.6821	0.9556
CF/k	-0.219	0.023	4.75	0.348	0.111	5.33	-0.281	0.02	4.689	0.4846	0.1424
Winsorized CF/k	0.202	0.023	2.214	0.666	0.111	2.599	0.151	0.02	2.168	0.2193	0.1444
BE/ME	0.548	0.484	0.47	0.526	0.471	0.382	0.55	0.485	0.479	0.7871	0.5455
Idio.volatility	0.025	0.022	0.014	0.021	0.019	0.01	0.026	0.023	0.014	0.0835*	0.0989*
Std.dev. of daily stock returns	0.028	0.026	0.014	0.025	0.022	0.012	0.028	0.026	0.014	0.1774	0.186
Std.dev. of quarterly ROA	0.02	0.014	0.028	0.025	0.011	0.068	0.019	0.014	0.019	0.2818	0.0736*
Winsorized KMV EDF	1.363	0.222	3.558	0.659	0.183	1.086	1.441	0.227	3.726	0.2462	0.3122
Director Variables											
Outside directors	84.32%	87.50%	0.165	83.90%	85.71%	0.152	84.36%	87.50%	0.166	0.8812	0.6634
Banker directors	1.29%	0.00%	0.045	13.20%	10.00%	0.071	0.00%	0.00%	0	0***	0***
Affiliated BD	0.03%	0.00%	0.005	0.27%	0.00%	0.015	0.00%	0.00%	0	0.0023***	0.0024***
Nonaffiliated BD	1.26%	0.00%	0.045	12.94%	10.00%	0.074	0.00%	0.00%	0	0***	0***

Table 2.4 Continued

Panel B. Abnormal returns and Cumulative Abnormal Returns for all firms

	Obs	Mean	Median	T-test	Patell Test	BMP Test	Sign-rank statistics
AR(-1)	317	0.16%	-0.04%	0.2442	0.1741	0.2296	0.4629
AR(0)	317	-0.45%	-0.27%	0.1086	0.0000 ***	0.0466 **	0.0720 *
AR(+1)	317	-0.40%	-0.24%	0.1544	0.0223 **	0.1930	0.0939 *
CAR (-1,+1)	317	-0.69%	-0.27%	0.1311	0.0005 ***	0.0715 *	0.1465
CAR (-2,+2)	317	-1.04%	-0.44%	0.0612 *	0.0002 ***	0.0324 **	0.0617 *
CAR (-5,+5)	317	-1.38%	-0.70%	0.0714 *	0.0001 ***	0.0104 **	0.0533 *
CAR (-10,+10)	317	-1.56%	-1.83%	0.0980 *	0.0000 ***	0.0068 ***	0.0178 **

Panel C. Abnormal returns and Cumulative abnormal returns for firms with and without commercial banker director

	Firms with no CBD (N=286) : A				Firms with CBD (N = 31) : B				Test of difference (A-B)	
	Mean	t-test	Median	Sign-rank statistics	Mean	t-test	Median	Sign-rank statistics	t-test	Mann-Whitney z-test
AR(-1)	0.17%	0.4850	-0.07%	0.9045	0.01%	0.9876	0.25%	0.8293	0.8273	0.8706
AR(0)	-0.59%	0.1295	-0.33%	0.0553 *	0.82%	0.4542	0.21%	0.2811	0.2533	0.0950 *
AR(+1)	-0.73%	0.0680 *	-0.28%	0.0518 *	2.69%	0.0825 *	0.17%	0.0811 *	0.0096 ***	0.0212 **
CAR (-1,+1)	-1.14%	0.0829 *	-0.34%	0.0931 *	3.52%	0.0295 **	0.60%	0.0745 *	0.0250 **	0.0277 **
CAR (-2,+2)	-1.49%	0.0397 **	-0.71%	0.0353 **	3.12%	0.0658 *	0.98%	0.1124	0.0430 *	0.0306 **
CAR (-5,+5)	-1.84%	0.0746 *	-0.87%	0.0276 **	2.90%	0.0400 **	2.43%	0.0778 *	0.1369	0.0218 **
CAR (-10,+10)	-1.98%	0.1307	-1.87%	0.0239 **	2.37%	0.3327	-1.38%	0.9064	0.2868	0.2907

Table 2.5
OLS regressions of cumulative abnormal returns (CARs) around the forced CEO turnover announcement date

The dependent variable is cumulative abnormal return (-1, +1) for firms that announced forced CEO turnover. The abnormal returns are calculated based on market-model, where market model is estimated using returns from -150 to -31 days from the CEO turnover announced date. The model uses CRSP value-weighted index as a proxy for the market portfolio. Daily abnormal returns are accumulated to obtain CAR from day -1 to day +1, where 0 is the day of CEO turnover announcement. Confounding events such as mergers and acquisitions, earnings announcements, restatements, and class action lawsuits within +1/-1 day of the CEO turnover announcement day are excluded from the sample. See Appendix A Section A for variable definitions. In Panel A, in columns (1) – (2), the effect of BD's existence on CEO turnover announcement is observed and in columns (3) – (8), interaction analysis with performance measure is performed to see the impact on CEO turnover announcement effect. Performance measure used in (3) – (5) is industry median adjusted ROA and in (6) – (8) is cash flow. In Panel B, risk measure is interacted with director variables; columns (1) – (3) uses KMV Expected Default Frequency (KMV EDF) winsorized at 1, 99% level, while columns (4) – (6) uses change in KMV EDF variable as a risk measure. Year dummies and industry dummies are included in all specifications. Industry is defined using Fama-French 49 industry classification. *, **, and *** indicate the significance at the10%, 5%, and 1% level, respectively. P-values are in parentheses. Standard errors are clustered at the firm level.

Panel A. Interaction with Performance measures

Performance measure used:	No Interaction		ROA (ind.adj.)			Cash flow (ind.adj.)		
Dependent variable: CAR (-1, +1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Directors								
[A]: Fraction of outside directors	0.135***	0.131***	0.15***	0.148***	0.164***	0.139***	0.143***	0.143***
	(0.006)	(0.009)	(0.005)	(0.003)	(0.003)	(0.005)	(0.004)	(0.004)
[B]: Fraction of banker directors		0.276**		0.345**	0.361***		0.354**	0.348**
		(0.045)		(0.012)	(0.009)		(0.014)	(0.016)
ROA (ind.adj.) * [A]			-0.184		-0.288			
			(0.532)		(0.315)			
ROA (ind.adj.) * [B]				-1.926**	-1.981**			
				(0.028)	(0.027)			
Cash flow (ind.adj.) * [A]						0.008		0.007
						(0.471)		(0.554)
Cash flow (ind.adj.) * [B]							-0.053*	-0.054*
							(0.092)	(0.082)

Table 2.5 Panel A Continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Controls								
1yr excess stock return	-0.014	-0.013						
	(0.292)	(0.322)						
ROA (ind.adj.)			0.164	-0.001	0.274			
			(0.584)	(0.961)	(0.348)			
Cash flow (ind.adj.)						-0.007	0.001	-0.006
						(0.503)	(0.228)	(0.620)
idiosyncratic risk	-0.035	-0.023	-0.001	-0.065	-0.071	0.041	0.015	0.017
	(0.960)	(0.974)	(0.999)	(0.924)	(0.917)	(0.954)	(0.983)	(0.981)
Size: log(Total Assets)	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003	-0.005	-0.005
	(0.423)	(0.414)	(0.530)	(0.418)	(0.475)	(0.433)	(0.297)	(0.285)
BE/ME	-0.006	-0.006	-0.001	-0.007	-0.001	-0.004	-0.007	-0.007
	(0.740)	(0.759)	(0.968)	(0.719)	(0.954)	(0.815)	(0.738)	(0.707)
1{CEO outsider succession}	0.009	0.007	0.01	0.006	0.006	0.011	0.009	0.009
	(0.522)	(0.599)	(0.490)	(0.645)	(0.651)	(0.424)	(0.524)	(0.496)
constant	-0.021	-0.026	-0.034	-0.008	-0.029	-0.022	-0.058	-0.056
	(0.771)	(0.727)	(0.650)	(0.911)	(0.711)	(0.761)	(0.427)	(0.438)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	317	317	317	317	317	317	317	317
Adj.R2	0.035	0.046	0.03	0.053	0.052	0.029	0.052	0.049

Table 2.5 Continued

Panel B. Interaction with Risk measures						
Risk measure used:	KMV Expected Default Risk			Chg in KMV Expected Default Risk		
Dependent variable: CAR (-1, +1)	(1)	(2)	(3)	(4)	(5)	(6)
[A]: Fraction of outside directors	0.094 *	0.153 ***	0.086 *	0.117 **	0.123 **	0.111 **
	(0.065)	(0.006)	(0.098)	(0.013)	(0.015)	(0.021)
[B]: Fraction of banker directors		0.434 **	0.437 **		0.327 ***	0.329 **
		(0.018)	(0.016)		(0.010)	(0.011)
KMV EDF * [A]	0.041 ***		0.041 ***			
	(0.004)		(0.003)			
KMV EDF * [B]		-0.012	-0.003			
		(0.927)	(0.984)			
change in KMV EDF * [A]				0.032 *		0.032 *
				(0.080)		(0.077)
change in KMV EDF * [B]					0.021	0.007
					(0.786)	(0.930)
1yr excess stock return	-0.017	-0.015	-0.015	0.02	0.018	0.023
	(0.219)	(0.268)	(0.257)	(0.229)	(0.266)	(0.167)
ROA (ind.adj.)	-0.536	-0.37	-0.567	0.011	0.005	0.011
	(0.466)	(0.622)	(0.434)	(0.744)	(0.885)	(0.729)
Size: log(Total Assets)	-0.003	-0.003	-0.003	-0.004	-0.004	-0.004
	(0.460)	(0.400)	(0.460)	(0.243)	(0.211)	(0.215)
BE/ME	-0.015	-0.003	-0.016	-0.007	0.001	-0.006
	(0.390)	(0.839)	(0.365)	(0.708)	(0.938)	(0.756)
1{CEO outsider succession}	0.002	0.003	0	0.005	0.004	0.003
	(0.896)	(0.770)	(0.989)	(0.720)	(0.787)	(0.828)
KMV EDF	-0.028 ***	0.003	-0.028 ***			
	(0.006)	(0.318)	(0.004)			
change in KMV EDF				-0.016	0.009 ***	-0.016
				(0.284)	(0.006)	(0.291)
constant	0.101	0.035	0.083	-0.305 *	-0.347 **	-0.317 *
	(0.380)	(0.764)	(0.485)	(0.060)	(0.034)	(0.052)

Table 2.5 Panel B Continued

	(1)	(2)	(3)	(4)	(5)	(6)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	310	310	310	308	308	308
Adj.R2	0.087	0.078	0.114	0.096	0.092	0.11

Table 2.6
Test of differences before and after CEO turnover

The sample period is 1997-2008. Test of difference is performed for samples between firms with banker directors and firms without banker directors. CBD represents the commercial banker director on the board and non CBD stands for non-commercial banker director on the board. Panel A and B tables show industry median adjusted ROA graph before and after the CEO turnover event, where t = 0 is the year when the CEO was forced out. Panel C and D show values of industry median adjusted CF/k. Panel E and F show industry median adjusted KMV EDF measures. Panel G and H show idiosyncratic risk measure and Panel I and J show values of pay-performance-sensitivity (PPS) measured by following Core and Guay (2002). Panel K and L show values of Vega, which is All the values are winsorized at 1% and 99% level and the dot values are average values. ^^ and ^ denotes significance level at 5% and 10% for one-tailed test, respectively and *, **, and *** represent significance level at 10%, 5%, and 1% level, respectively.

Panel A. Pre/Post ROA (industry median adjusted) for firms with and without CBD

Year from forced turnover	Firms with no CBD (A) N = 315	Firms with CBD (B) N = 32	Test of difference (A-B) (p-value)	
	mean	mean	t-test	
-4	0.0567	0.0659	-0.4043	
			(0.6883)	
-3	0.0457	0.0724	-1.2675	^
			(0.2128)	
-2	0.0380	0.0632	-1.1641	
			(0.2519)	
-1	0.0295	0.0350	-0.2563	
			(0.7992)	
0	0.0125	0.0141	-0.0669	
			(0.9470)	
1	0.0146	0.0168	-0.0946	
			(0.9251)	
2	0.0119	0.0183	-0.3173	
			(0.7528)	
3	0.0135	0.0214	-0.4504	
			(0.6552)	

Table 2.6 Continued-1

Panel B. Pre/Post ROA (industry median adjusted) Difference-in-Difference test			
Year from forced turnover	Firms with no CBD (N = 315): A	Firms with CBD (N = 32): B	Test of difference (A-B) (p-value)
	mean	mean	t-test
(-1, 0)	-0.0183276	-0.0189467	0.0521 (0.9587)
(-1, +1)	-0.0179492	-0.0142409	-0.2371 (0.8139)
(-1, +2)	-0.0218753	-0.0164224	-0.321 (0.7500)
(-1, +3)	-0.0275924	-0.0054215	-1.0566 (0.3000)

Panel C. Pre/Post CF/k (industry adjusted) for firms with and without CBD						
Year from forced turnover	Firms with no CBD (A)		Firms with CBD (B)		Test of difference (A-B) (p-value)	
	n	mean	n	mean	t-test	
-4	315	0.4799	32	0.9629	-1.0672 (0.2932)	
-3	315	0.46	32	1.0569	-1.3537 (0.1844)	^
-2	315	0.3703	32	1.0156	-1.3978 (0.1710)	^
-1	315	0.1601	32	0.6185	-0.972 (0.3375)	
0	313	-0.1919	31	0.3774	-1.1602 (0.2541)	
1	304	-0.1935	30	0.7336	-2.3737 (0.0232)	**
2	279	-0.143	29	0.4671	-1.9309 (0.0606)	*
3	224	-0.1466	23	0.4392	-1.6973 (0.0999)	*

Table 2.6 Continued-2

Panel D. Pre/Post CF/K (industry median adjusted) Difference-in-Difference test			
Year from forced turnover	Firms with no CBD (N = 315): A	Firms with CBD (N = 32): B	Test of difference (A-B) (p-value)
	mean	mean	t-test
(-1, 0)	-0.3844163	-0.2520427	-0.9122 (0.3644)
(-1, +1)	-0.3842305	0.1206611	-1.1681 (0.2506)
(-1, +2)	-0.3535075	-0.3453927	-0.0234 (0.9814)
(-1, +3)	-0.449145	-0.5903332	0.3122 (0.7570)

Panel E. Pre/Post KMV EDF (industry median adjusted) for firms with and without CBD					
Year from forced turnover	Firms with no CBD (A)		Firms with CBD (B)		Test of difference (A-B) (p-value)
	N	mean	N	mean	t-test
-4	291	1.111197	28	0.620872	1.2973^ (0.1999)
-3	304	1.37973	30	0.188309	4.2413*** (0.0000)
-2	316	1.370262	31	0.30082	3.5687*** (0.0004)
-1	320	1.619436	32	0.47854	3.4175*** (0.0008)
0	256	1.776338	23	0.54717	2.7311*** (0.0075)
1	190	1.287466	21	0.25528	3.025*** (0.0028)
2	140	0.807383	14	0.12901	2.5911** (0.0105)
3	95	0.879362	10	0.38962	1.1341 (0.2618)

Table 2.6 Continued-3

Panel F. Pre/Post KMV EDF (industry median adjusted) Difference-in-Difference test			
Year from forced turnover	Firms with no CBD (N = 315): A	Firms with CBD (N = 32): B	Test of difference (A-B) (p-value)
	mean	mean	t-test
(-1, 0)	0.0791699	0.1222801	-0.0931
			(0.9259)
(-1, +1)	-0.3522546	-0.2130063	-0.2905
			(0.7717)
(-1, +2)	-1.095406	-0.5427874	-0.9773
			(0.3300)
(-1, +3)	-1.211198	-0.3931565	-1.0653
			(0.2897)

Panel G. Pre/Post Idiosyncratic risk (non-industry adjusted) for firms with and without CBD				
Year from forced turnover	Firms with no CBD (A) N = 315	Firms with CBD (B) N = 32	Test of difference (A-B) (p-value)	
	mean	mean	t-test	
-2	0.027483	0.0215731	2.6742	**
			(0.0106)	
-1	0.0271319	0.0212332	2.8071	***
			(0.0070)	
0	0.0310784	0.02347	3.2945	***
			(0.0026)	
1	0.0253286	0.0220978	1.236	
			(0.2272)	
2	0.0234017	0.0186769	1.638	^^
			(0.1196)	

Table 2.6 Continued-4

Panel H. Pre/Post Idiosyncratic risk Difference-in-Difference test				
Year from forced turnover	Firms with no CBD (N = 315): A	Firms with CBD (N = 32): B	Test of difference (A-B) (p-value)	
	mean	mean	t-test	
(-1, 0)	0.0056549	0.0019695	2.1017	**
			(0.0433)	
(-1, +1)	-0.0003473	-0.0007284	0.1074	
			(0.9153)	
(-1, +2)	-0.0027815	-0.0069371	1.0683	
			(0.3007)	

Panel I. Pre/Post PPS_CG (industry median adjusted) for firms with and without CBD						
Year from forced turnover	Firms with no CBD (A)		Firms with CBD (B)		Test of difference (A-B) (p-value)	
	N	mean	N	mean	t-test	
-4	291	134.5048	28	431.7392	-1.5825	^
					(0.1241)	
-3	304	130.6977	30	267.4744	-0.8414	
					(0.4061)	
-2	316	125.4299	31	218.828	-0.5964	
					(0.5549)	
-1	320	123.662	32	216.075	-0.569	
					(0.5729)	
0	256	-66.8352	23	-38.3199	-0.1913	
					(0.8499)	
1	190	-59.8024	21	96.8839	-0.9826	
					(0.3368)	
2	140	-38.2087	14	114.967	-0.7644	
					(0.4578)	
3	95	34.76651	10	549.046	-1.3562	^
					(0.2071)	

Table 2.6 Continued-5

Panel J. Pre/Post PPS_CG (industry median adjusted) Difference-in-Difference test				
Year from forced turnover	Firms with no CBD (N = 315): A	Firms with CBD (N = 32): B	Test of difference (A-B) (p-value)	
	mean	mean	t-test	
(-1, 0)	-220.7283	-98.98247	-1.1046	
			(0.2766)	
(-1, +1)	-158.0587	71.19046	-2.1752	**
			(0.0359)	
(-1, +2)	-169.0391	-44.98466	-0.4985	
			(0.6255)	
(-1, +3)	-166.6716	293.2865	-2.7099	**
			(0.0161)	

Panel K. Pre/Post VEGA (industry median adjusted) for firms with and without CBD						
Year from forced turnover	Firms with no CBD (A)		Firms with CBD (B)		Test of difference (A-B) (p-value)	
	N	mean	N	mean	t-test	
-4	291	26.34144	28	26.10046	0.0145	
					(0.9885)	
-3	304	24.72174	30	32.5866	-0.4195	
					(0.6766)	
-2	316	18.76536	31	28.3899	-0.4182	
					(0.6786)	
-1	320	19.58228	32	10.7751	0.7066	
					(0.4827)	
0	256	11.50743	23	55.4777	-0.8017	
					(0.4312)	
1	190	8.575442	21	46.4542	-1.5711	^
					(0.1310)	
2	140	9.889426	14	15.0522	-0.4892	
					(0.6313)	
3	95	18.42026	10	111.44	-1.0531	
					(0.3195)	

Table 2.6 Continued-6

Panel L. Pre/Post VEGA (industry median adjusted) Difference-in-Difference test				
Year from forced turnover	Firms with no CBD (N = 315): A	Firms with CBD (N = 32): B	Test of difference (A-B) (p-value)	
	mean	mean	t-test	
(-1, 0)	-11.62768	50.31709	-1.2074	
			(0.2395)	
(-1, +1)	-13.71773	39.64461	-1.892	*
			(0.0694)	
(-1, +2)	-9.970615	16.30463	-1.2729	^
			(0.2181)	
(-1, +3)	-11.79587	112.762	-1.6017	^
			(0.1418)	

Table 2.7
Post performance analysis after CEO turnover

The sample period is 1997-2008. In Panel A and B, OLS regression is performed and the dependent variable is industry median adjusted change in ROA from year 0 to +1, which t= 0 is the year when CEO turnover was announced. Panel B, interaction with performance measure has been performed. Panel C, interaction with risk measure has been performed. 1 yr excess stock perf. is annualized monthly stock returns subtracted by CRSP value-weighted index, Idio.volatility is the sigma created as in Bushman et al. (2010), Ln(assets) is proxying for firm size, BE/ME is book-to-market equity, and 1{CEO outsider succession} is a dummy variable taking a value 1 when a successive CEO was an outsider and zero otherwise. Year dummies and industry dummies are included in all specifications. ^^ and ^ denotes significance level at 5% and 10% for one-tailed test, respectively and *, **, and *** represent significance level at 10%, 5%, and 1% level, respectively. P-values are in parentheses. Standard errors are clustered at the firm level.

Panel A. Banker director effect and performance measure interaction

Dependent variable: Chg in ROA (0, +1)	(1)	(2)	(3)	(4)	(5)
[A]: Fraction of outside directors	-0.076 **	-0.079 **	-0.121 **	-0.057	-0.091 *
	(0.035)	(0.027)	(0.016)	(0.132)	(0.062)
[B]: Fraction of banker directors		0.2 *		0.707 **	0.685 **
		(0.057)		(0.018)	(0.022)
ROA (raw) * [A]			0.416		0.29
			(0.155)		(0.281)
ROA (raw) * [B]				-5.36 *	-5.206 *
				(0.083)	(0.092)
1yr excess stock return	-0.013	-0.012			
	(0.336)	(0.359)			
ROA (ind.adj.)	-0.045	-0.045			
	(0.268)	(0.264)			
ROA (raw)			-0.44	-0.026	-0.303
			(0.139)	(0.488)	(0.262)
idiosyncratic risk	1.408 ***	1.416 ***	1.342 ***	1.32 ***	1.212 ***
	(0.003)	(0.003)	(0.006)	(0.001)	(0.007)
Size: log(Total Assets)	0.003	0.002	0.002	0.002	0.001
	(0.407)	(0.419)	(0.577)	(0.627)	(0.799)

Table 2.7 Panel A Continued

	(1)	(2)	(3)	(4)	(5)
BE/ME	0.011 ***	0.011 ***	0.01 ***	0.009 ***	0.009 **
	(0.003)	(0.003)	(0.006)	(0.003)	(0.010)
1{CEO outsider succession}	-0.001	-0.003	0	-0.004	-0.004
	(0.908)	(0.810)	(0.978)	(0.729)	(0.725)
constant	-0.181 ***	-0.175 ***	-0.104	-0.172 ***	-0.119 *
	(0.000)	(0.000)	(0.143)	(0.000)	(0.091)
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
N	336	336	336	336	336
Adj.R2	0.051	0.058	0.054	0.112	0.114

Panel B. Interaction with risk measure

Risk measure used:	Stock return risk			Idiosyncratic risk		
Dependent variable: Chg in ROA (0, +1)	(1)	(2)	(3)	(4)	(5)	(6)
[A]: Fraction of outside directors	-0.169 **	-0.096 ***	-0.159 **	-0.127 *	-0.089 **	-0.13 *
	(0.019)	(0.009)	(0.026)	(0.070)	(0.016)	(0.066)
[B]: Fraction of banker directors		-0.234	-0.223		-0.818 *	-0.818 *
		(0.208)	(0.245)		(0.055)	(0.059)
stock return risk * [A]	2.709		2.093			
	(0.206)		(0.337)			
stock return risk * [B]		15.129 **	14.451 **			
		(0.022)	(0.037)			
Idiosyncratic risk * [A]				1.9		1.541
				(0.445)		(0.547)
Idiosyncratic risk * [B]					39.536 **	39.416 **
					(0.027)	(0.031)

Table 2.7 Panel B Continued

	(1)	(2)	(3)	(4)	(5)	(6)
1yr excess stock return	-0.015	-0.012	-0.013	-0.013	-0.009	-0.01
	(0.247)	(0.337)	(0.305)	(0.312)	(0.469)	(0.446)
ROA (ind.adj.)	-0.039	-0.045	-0.042	-0.042	-0.045	-0.043
	(0.339)	(0.260)	(0.301)	(0.314)	(0.246)	(0.282)
Size: log(Total Assets)	0.002	0.002	0.002	0.003	0.004	0.004
	(0.537)	(0.560)	(0.501)	(0.329)	(0.284)	(0.241)
BE/ME	0.008	0.012 ***	0.008 *	0.008	0.01 ***	0.008
	(0.103)	(0.001)	(0.075)	(0.133)	(0.003)	(0.125)
1{CEO outsider succession}	-0.001	-0.003	-0.003	-0.001	-0.005	-0.005
	(0.898)	(0.777)	(0.776)	(0.908)	(0.674)	(0.676)
stock return risk	-0.631	1.489 ***	-0.171			
	(0.719)	(0.001)	(0.924)			
idiosyncratic risk				-0.143	1.308 ***	0.05
				(0.943)	(0.003)	(0.980)
constant	-0.121 *	-0.174 ***	-0.127 *	-0.145 **	-0.177 ***	-0.148 **
	(0.092)	(0.000)	(0.075)	(0.023)	(0.000)	(0.017)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	336	336	336	336	336	336
Adj.R2	0.053	0.065	0.064	0.05	0.101	0.099

Table 2.8
Post risk analysis after CEO turnover

The sample period is 1997-2008. In Panel A, OLS regression is performed where the dependent variable is change in Idiosyncratic risk from year 0 to +1, which t= 0 is the year when CEO turnover was announced. In Panel A, columns (1) – (2) have no interaction effects, columns (3) – (5) include interaction with 1{ High change of Idio.risk (-2, -1) }, which represents a dummy variable where the variable equals one if the change of Idiosyncratic risk (-2, -1) is in the 4th quartile and zero otherwise, and columns (6) – (8) use interaction with the level variable of idiosyncratic risk measured at 1 year prior to the CEO turnover. In Panel B, the dependent variable is change in ROA risk from year 0 to +1 from columns (1) – (3) and change in ROA risk from year 0 to +2 from columns (4) – (6). Year dummies and industry dummies are included in all specifications. *, **, and *** indicate the significance at the10%, 5%, and 1% level, respectively. P-values are in parentheses. Standard errors are clustered at the firm level.

Panel A. Idiosyncratic risk								
Dependent variable: change in Idio.risk (0, +1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
director variables								
[A]: Fraction of outside directors	-0.004	-0.004	-0.003	-0.005	-0.004	0.019	-0.002	0.019
	(0.640)	(0.665)	(0.709)	(0.596)	(0.678)	(0.257)	(0.819)	(0.257)
[B]: Fraction of banker directors		-0.008		0.002	0.003		0.072	0.072
		(0.651)		(0.922)	(0.902)		(0.109)	(0.113)
Interactions								
{High change of Idio.risk (-2, -1)} *[A]			-0.011		-0.015			
			(0.560)		(0.451)			
{High change of Idio.risk (-2, -1)} *[B]				-0.095 *	-0.1 *			
				(0.091)	(0.061)			
Idiosyncratic risk t-1 * [A]						-0.843		-0.818
						(0.168)		(0.195)
Idiosyncratic risk t-1 * [B]							-2.958 **	-2.904 **
							(0.039)	(0.048)
controls								
{High change of Idio.risk (-2, -1)}	-0.002	-0.002	0.007	0	0.011			
	(0.634)	(0.622)	(0.635)	(0.933)	(0.456)			

Table 2.8 Panel A Continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
idiosyncratic risk t-1						0.477	-0.172	0.468
						(0.326)	(0.181)	(0.344)
1yr excess stock return	-0.001	-0.001	-0.001	-0.001	-0.001	-0.002	-0.002	-0.002
	(0.322)	(0.322)	(0.300)	(0.382)	(0.353)	(0.186)	(0.180)	(0.146)
ROA (ind.adj.)	-0.02	-0.02	-0.02	-0.023 *	-0.024 *	-0.027 **	-0.024 *	-0.027 **
	(0.129)	(0.128)	(0.129)	(0.092)	(0.093)	(0.042)	(0.071)	(0.037)
Size: log(Total Assets)	0	0	0	0	0	0	0	0
	(0.743)	(0.744)	(0.826)	(0.697)	(0.799)	(0.655)	(0.728)	(0.593)
BE/ME	0	0	0	-0.001	-0.001	0	0	-0.001
	(0.935)	(0.943)	(0.890)	(0.807)	(0.748)	(0.857)	(0.906)	(0.775)
1{CEO outsider succession}	0.001	0.002	0.001	0.002	0.002	0.002	0.002	0.002
	(0.553)	(0.524)	(0.550)	(0.470)	(0.463)	(0.484)	(0.429)	(0.446)
constant	0.006	0.006	0.006	0.006	0.006	0.001	0.012	0
	(0.521)	(0.496)	(0.501)	(0.515)	(0.487)	(0.912)	(0.281)	(0.974)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	205	205	205	205	205	205	205	205
Adj.R2	0.077	0.072	0.073	0.077	0.074	0.099	0.094	0.101

Table 2.8 Continued

Panel B. ROA risk						
Dependent variable:	**change in ROA risk (0 , +1)**			**change in ROA risk (0 , +2)**		
	(1)	(2)	(3)	(4)	(5)	(6)
director variables						
[A]: Fraction of outside directors	0.007 *	0	0.001	0.014 **	0.003	0.001
	(0.095)	(0.955)	(0.808)	(0.026)	(0.469)	(0.821)
[B]: Fraction of banker directors		0.023 *	0.023 *		0.028 **	0.029 **
		(0.076)	(0.069)		(0.033)	(0.038)
ROA risk * [A]	-0.414 *		-0.048	-0.735 **		0.123
	(0.055)		(0.798)	(0.032)		(0.702)
ROA risk * [B]		-0.803 ***	-0.77 ***		-1.57 ***	-1.658 ***
		(0.002)	(0.004)		(0.000)	(0.000)
controls						
1yr excess stock return	0	0	0	0	-0.001	-0.001
	(0.758)	(0.922)	(0.930)	(0.895)	(0.508)	(0.489)
ROA (ind.adj.)	-0.016 ***	-0.009 **	-0.01 **	-0.044 ***	-0.03 ***	-0.029 ***
	(0.000)	(0.014)	(0.014)	(0.000)	(0.000)	(0.001)
Size: log(Total Assets)	-0.001 **	-0.001 *	-0.001 *	-0.001 ***	-0.001 **	-0.001 **
	(0.027)	(0.083)	(0.084)	(0.006)	(0.025)	(0.025)
BE/ME	-0.001	-0.001	-0.001	-0.003	-0.002	-0.002
	(0.534)	(0.599)	(0.577)	(0.163)	(0.255)	(0.293)
1{CEO outsider succession}	0.001	0	0	0.002	0.002	0.002
	(0.464)	(0.672)	(0.664)	(0.252)	(0.335)	(0.352)
ROA risk	0.155	-0.133 **	-0.092	0.28	-0.204 ***	-0.309
	(0.463)	(0.011)	(0.608)	(0.390)	(0.009)	(0.274)
constant	0.003	0.003	0.003	0.011 *	0.012 **	0.012 **
	(0.518)	(0.311)	(0.401)	(0.086)	(0.047)	(0.043)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	304	304	304	289	289	289
Adj.R2	0.421	0.445	0.443	0.487	0.522	0.521

Table 2.9
Level of Total Compensation and banker directors

The sample period is 1997-2008. In all panels, dependent variable of log(1+total compensation) is used. Total compensation is TDC1 variable from the Anncomp table of Execucomp data. In Panel A, interaction terms with banker director variables and KMV EDF risk measures are used for the analysis, where KMV EDF is winsorized at (1, 99%) level. In Panel B, interaction analyses with performance measures are performed. Columns (1) – (4) uses 1 year lagged annualized monthly stock returns in excess of CRSP value-weighted market index as a performance measure, and columns (5) – (8) uses 1 year lagged industry median adjusted ROA, which is defined as OBIDP/AT from Funda table of Compustat data. Industry is defined using Fama-French 49 industry classification. All specifications in this table use firm fixed effect models and include year dummies. *, **, and *** indicate the significance at the10%, 5%, and 1% level at two-tailed tests, respectively. P-values are in parentheses. Standard errors are clustered at the firm level. Control variables are defined in Appendix A Section A.

Panel A. Total Compensation and Interaction with RISK measure

Dependent variable: log(total compensation)	(1)	(2)	(3)	(4)
[A]: Fraction of outside directors	0.188	0.192	0.192	0.195
	(0.229)	(0.221)	(0.219)	(0.215)
[B]: Fraction of banker directors		-0.198		
		(0.636)		
[C]: Fraction of affiliated banker director			-0.287	-0.322
			(0.688)	(0.663)
[D]: Fraction of nonaffiliated banker director				-0.121
				(0.782)
KMV Expected Default risk t-1 * [A]	0.009	0.009	0.007	0.006
	(0.781)	(0.796)	(0.834)	(0.856)
KMV Expected Default risk t-1 * [B]		0.104		
		(0.301)		
KMV Expected Default risk t-1 * [C]			-1.846 ***	-1.823 ***
			(0.003)	(0.003)
KMV Expected Default risk t-1 * [D]				0.12
				(0.198)
KMV Expected Default risk t-1	0.003	0.002	0.005	0.005
	(0.899)	(0.922)	(0.835)	(0.854)
Size: log(Total Assets) t-1	0.025	0.026	0.025	0.024
	(0.599)	(0.597)	(0.613)	(0.613)
BE/ME t-1	-0.261 ***	-0.263 ***	-0.261 ***	-0.263 ***
	(0.000)	(0.000)	(0.000)	(0.000)
1yr excess stock return t-1	0.097 ***	0.097 ***	0.097 ***	0.097 ***
	(0.002)	(0.002)	(0.002)	(0.002)
ROA (ind.adj.) t-1	0.448 *	0.45 *	0.443 *	0.444 *
	(0.070)	(0.069)	(0.073)	(0.073)
1{Chairman CEO}	0.018	0.018	0.018	0.018
	(0.535)	(0.535)	(0.530)	(0.535)

Table 2.9 Panel A Continued

	(1)	(2)	(3)	(4)
Board size	-0.034	-0.034	-0.023	-0.023
	(0.759)	(0.757)	(0.830)	(0.833)
1{High CEO ownership}	-0.226 ***	-0.226 ***	-0.226 ***	-0.226 ***
	(0.008)	(0.008)	(0.008)	(0.008)
Institutional ownership	0.115	0.112	0.12	0.118
	(0.327)	(0.338)	(0.307)	(0.314)
constant	7.905 ***	7.906 ***	7.885 ***	7.885 ***
	(0.000)	(0.000)	(0.000)	(0.000)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	7128	7128	7128	7128
Adj.R2	0.044	0.044	0.044	0.044

Table 2.9 Continued

Panel B. Total compensation and Interaction with Performance measure								
Performance measure used:	1yr excess stock return t-1				ROA (ind.adj.) t-1			
Dependent variable: log(total compensation)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
[A]: Fraction of outside directors	0.180	0.183	0.184	0.186	0.193	0.195	0.199	0.200
	(0.279)	(0.274)	(0.267)	(0.266)	(0.267)	(0.264)	(0.252)	(0.252)
[B]: Fraction of banker directors		-0.160				-0.200		
		(0.695)				(0.654)		
[C]: Fraction of affiliated banker director			-1.032	-1.054			-1.292	-1.332
			(0.127)	(0.139)			(0.132)	(0.133)
[D]: Fraction of nonaffiliated banker director				-0.059				-0.079
				(0.890)				(0.865)
PERFORMANCE t-1 * [A]	0.046	0.045	0.043	0.043	-0.280	-0.273	-0.294	-0.286
	(0.741)	(0.744)	(0.755)	(0.756)	(0.756)	(0.763)	(0.744)	(0.752)
PERFORMANCE t-1 * [B]		0.682				0.114		
		(0.159)				(0.971)		
PERFORMANCE t-1 * [C]			0.880***	1.478**			4.192	4.213
			(0.007)	(0.011)			(0.714)	(0.710)
PERFORMANCE t-1 * [D]				0.663				-0.186
				(0.169)				(0.955)
Size: log(Total Assets) t-1	0.007	0.007	0.007	0.006	0.003	0.003	0.003	0.003
	(0.877)	(0.885)	(0.889)	(0.899)	(0.953)	(0.947)	(0.956)	(0.954)
PERFORMANCE t-1	0.053	0.045	0.054	0.045	0.727	0.722	0.733	0.729
	(0.623)	(0.676)	(0.619)	(0.671)	(0.359)	(0.362)	(0.355)	(0.357)
BE/ME t-1	-0.267***	-0.267***	-0.267***	-0.267***	-0.318***	-0.317***	-0.317***	-0.317***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Idiosyncratic risk t-1	-0.727	-0.797	-0.739	-0.803	-0.388	-0.396	-0.403	-0.405
	(0.670)	(0.640)	(0.665)	(0.638)	(0.818)	(0.815)	(0.811)	(0.811)
1{Chairman CEO}	0.020	0.018	0.020	0.019	0.019	0.019	0.019	0.020
	(0.499)	(0.530)	(0.489)	(0.521)	(0.525)	(0.520)	(0.507)	(0.505)
Board size	-0.045	-0.045	-0.042	-0.043	-0.049	-0.050	-0.047	-0.047
	(0.683)	(0.677)	(0.699)	(0.695)	(0.653)	(0.648)	(0.667)	(0.665)

Table 2.9 Panel B Continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1{High CEO ownership}	-0.233***	-0.233***	-0.232***	-0.233***	-0.228***	-0.228***	-0.228***	-0.228***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.008)	(0.008)	(0.008)
Institutional ownership	0.124	0.118	0.123	0.118	0.122	0.120	0.123	0.123
	(0.283)	(0.306)	(0.287)	(0.306)	(0.293)	(0.299)	(0.286)	(0.289)
Constant	8.102***	8.117***	8.100***	8.114***	8.130***	8.132***	8.122***	8.123***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	7209	7209	7209	7209	7209	7209	7209	7209
Adj.R2	0.043	0.043	0.043	0.043	0.04	0.04	0.04	0.04

Table 2.10
Level of Equity Compensation and banker directors

The sample period is 1997-2008. In all panels, dependent variable of log(1+equity compensation) is used. Equity compensation is sum of stock and option pay, where stock is RSTKGRNT for years before 2006, and stock_awards_fv for years on and after 2006 while equity pay is defined as opt_awards_blk_value for years before 2006, and opt_awards_fv for years on and after 2006, variables all coming from the Anncomp table of Execucomp data. In Panel A, interaction terms with banker director variables and KMV EDF risk measures are used for the analysis, where KMV EDF is winsorized at (1, 99%) level. In Panel B, interaction analyses with performance measures are performed. Columns (1) – (4) uses 1 year lagged annualized monthly stock returns in excess of CRSP value-weighted market index as a performance measure, and columns (5) – (8) uses 1 year lagged industry median adjusted ROA, which is defined as OBIDP/AT from Funda table of Compustat data. Industry is defined using Fama-French 49 industry classification. All specifications in this table use firm fixed effect models and include year dummies. *, **, and *** indicate the significance at the10%, 5%, and 1% level at two-tailed tests, respectively. P-values are in parentheses. Standard errors are clustered at the firm level.

Panel A. Equity Compensation and Interaction with RISK measure

Dependent variable: log(equity compensation)	(1)	(2)	(3)	(4)
[A]: Fraction of outside directors	0.789	0.794	0.795	0.798
	(0.125)	(0.125)	(0.123)	(0.123)
[B]: Fraction of banker directors		-0.27		
		(0.871)		
[C]: Fraction of affiliated banker director			1.114	1.087
			(0.577)	(0.610)
[D]: Fraction of nonaffiliated banker director				-0.116
				(0.948)
KMV Expected Default risk t-1 * [A]	0.032	0.031	0.021	0.02
	(0.743)	(0.744)	(0.828)	(0.836)
KMV Expected Default risk t-1 * [B]		0.08		
		(0.814)		
KMV Expected Default risk t-1 * [C]			-9.46 ***	-9.426 ***
			(0.001)	(0.001)
KMV Expected Default risk t-1 * [D]				0.16
				(0.629)
KMV Expected Default risk t-1	0.018	0.017	0.027	0.026
	(0.809)	(0.817)	(0.703)	(0.713)
Size: log(Total Assets) t-1	-0.14	-0.14	-0.145	-0.145
	(0.454)	(0.456)	(0.438)	(0.438)
BE/ME t-1	-0.333	-0.334	-0.329	-0.332
	(0.118)	(0.113)	(0.123)	(0.114)
1yr excess stock return t-1	0.076	0.076	0.076	0.076
	(0.412)	(0.414)	(0.414)	(0.414)
ROA (ind.adj.) t-1	0.77	0.772	0.752	0.752
	(0.322)	(0.322)	(0.334)	(0.335)

Table 2.10 Panel A Continued

	(1)	(2)	(3)	(4)
1{Chairman CEO}	-0.095	-0.095	-0.096	-0.096
	(0.410)	(0.411)	(0.408)	(0.406)
Board size	0.436	0.436	0.484	0.484
	(0.310)	(0.310)	(0.262)	(0.261)
1{High CEO ownership}	-0.81 ***	-0.81 ***	-0.807 ***	-0.807 ***
	(0.006)	(0.006)	(0.006)	(0.006)
Institutional ownership	-0.052	-0.055	-0.026	-0.029
	(0.913)	(0.908)	(0.956)	(0.952)
constant	6.11 ***	6.112 ***	6.021 ***	6.022 ***
	(0.001)	(0.001)	(0.001)	(0.001)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	7163	7163	7163	7163
Adj.R2	0.009	0.009	0.01	0.009

Table 2.10 Continued

Panel B. Equity compensation and Interaction with Performance measure								
Performance measure used:	1yr excess stock return t-1				ROA (ind.adj.) t-1			
Dependent variable: log(equity compensation)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
[A]: Fraction of outside directors	0.747	0.756	0.754	0.76	0.841	0.842	0.856*	0.854*
	(0.135)	(0.132)	(0.131)	(0.130)	(0.102)	(0.102)	(0.096)	(0.097)
[B]: Fraction of banker directors		-0.292				-2.082		
		(0.861)				(0.265)		
[C]: Fraction of affiliated banker director			-2.272	-2.267			-5.233	-6.119
			(0.273)	(0.308)			(0.162)	(0.101)
[D]: Fraction of nonaffiliated banker director				-0.037				-1.72
				(0.983)				(0.387)
PERFORMANCE t-1 * [A]	0.072	0.072	0.054	0.055	-1.416	-1.902	-1.46	-1.913
	(0.861)	(0.861)	(0.896)	(0.893)	(0.650)	(0.544)	(0.641)	(0.542)
PERFORMANCE t-1 * [B]		2.526*				30.661***		
		(0.066)				(0.005)		
PERFORMANCE t-1 * [C]			8.477***	10.618***			62.595	73.265*
			(0.000)	(0.000)			(0.127)	(0.075)
PERFORMANCE t-1 * [D]				2.381*				28.295**
				(0.080)				(0.013)
PERFORMANCE t-1	-0.004	-0.035	0	-0.031	1.928	2.055	1.925	2.054
	(0.992)	(0.916)	(1.000)	(0.927)	(0.476)	(0.446)	(0.477)	(0.447)
Size: log(Total Assets) t-1	-0.161	-0.163	-0.168	-0.17	-0.151	-0.139	-0.153	-0.141
	(0.382)	(0.376)	(0.363)	(0.356)	(0.418)	(0.461)	(0.414)	(0.453)
BE/ME t-1	-0.277	-0.28	-0.279	-0.282	-0.288	-0.273	-0.286	-0.273
	(0.153)	(0.148)	(0.150)	(0.145)	(0.117)	(0.138)	(0.119)	(0.137)
Idiosyncratic risk t-1	-2.786	-3.048	-2.769	-3.01	-2.512	-2.676	-2.462	-2.634
	(0.617)	(0.584)	(0.619)	(0.589)	(0.652)	(0.631)	(0.658)	(0.637)
1{Chairman CEO}	-0.098	-0.103	-0.097	-0.103	-0.101	-0.103	-0.096	-0.099
	(0.400)	(0.374)	(0.402)	(0.376)	(0.386)	(0.376)	(0.407)	(0.392)
Board size	0.375	0.372	0.387	0.385	0.37	0.361	0.38	0.371
	(0.380)	(0.383)	(0.364)	(0.365)	(0.387)	(0.396)	(0.373)	(0.383)

Table 2.10 Panel B Continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1{High CEO ownership}	-0.822***	-0.824***	-0.821***	-0.823***	-0.812***	-0.815***	-0.816***	-0.818***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)
Institutional ownership	-0.081	-0.1	-0.091	-0.107	-0.081	-0.072	-0.058	-0.054
	(0.863)	(0.830)	(0.846)	(0.818)	(0.862)	(0.878)	(0.901)	(0.907)
constant	6.534***	6.589***	6.556***	6.606***	6.338***	6.286***	6.297***	6.255***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	7244	7244	7244	7244	7244	7244	7244	7244
Adj.R2	0.008	0.008	0.009	0.009	0.008	0.009	0.009	0.009

Table 2.11
Level of Cash Compensation and banker directors

The sample period is 1997-2008. In all panels, dependent variable of log(1+cash compensation) is used. Cash compensation is sum of salary and bonus, where variables retrieved from the Anncomp table of Execucomp data. In Panel A, interaction terms with banker director variables and KMV EDF risk measures are used for the analysis, where KMV EDF is winsorized at (1, 99%) level. In Panel B, interaction analyses with performance measures are performed. Columns (1) – (4) uses 1 year lagged annualized monthly stock returns in excess of CRSP value-weighted market index as a performance measure, and columns (5) – (8) uses 1 year lagged industry median adjusted ROA, which is defined as OBIDP/AT from Funda table of Compustat data. Industry is defined using Fama-French 49 industry classification. All specifications in this table use firm fixed effect models and include year dummies. *, **, and *** indicate the significance at the10%, 5%, and 1% level at two-tailed tests, respectively. P-values are in parentheses. Standard errors are clustered at the firm level.

Panel A. Cash Compensation and Interaction with RISK measure

Dependent variable: log(cash compensation)	(1)	(2)	(3)	(4)
[A]: Fraction of outside directors	0.055	0.054	0.056	0.055
	(0.592)	(0.600)	(0.586)	(0.592)
[B]: Fraction of banker directors		0.164		
		(0.490)		
[C]: Fraction of affiliated banker director			-0.098	0.003
			(0.866)	(0.997)
[D]: Fraction of nonaffiliated banker director				0.198
				(0.412)
KMV Expected Default risk t-1 * [A]	0.028	0.027	0.027	0.026
	(0.174)	(0.189)	(0.183)	(0.202)
KMV Expected Default risk t-1 * [B]		0.085		
		(0.247)		
KMV Expected Default risk t-1 * [C]			-0.46 *	-0.424 *
			(0.060)	(0.080)
KMV Expected Default risk t-1 * [D]				0.088
				(0.218)
KMV Expected Default risk t-1	-0.018	-0.018	-0.018	-0.018
	(0.286)	(0.280)	(0.300)	(0.297)
Size: log(Total Assets) t-1	0.032	0.031	0.031	0.031
	(0.413)	(0.418)	(0.416)	(0.423)
BE/ME t-1	-0.065	-0.067	-0.065	-0.067
	(0.128)	(0.116)	(0.129)	(0.116)
1yr excess stock return t-1	0.04 **	0.04 **	0.04 **	0.04 **
	(0.018)	(0.018)	(0.019)	(0.018)
ROA (ind.adj.) t-1	0.058	0.056	0.057	0.054
	(0.722)	(0.729)	(0.728)	(0.739)
1{Chairman CEO}	0.032 *	0.032 *	0.032 *	0.032 *
	(0.091)	(0.096)	(0.090)	(0.095)

Table 2.11 Panel A Continued

	(1)	(2)	(3)	(4)
Board size	-0.093	-0.093	-0.091	-0.09
	(0.245)	(0.249)	(0.259)	(0.265)
1{High CEO ownership}	-0.001	-0.001	0	-0.001
	(0.996)	(0.994)	(0.997)	(0.995)
Institutional ownership	0.185	0.185	0.186	0.187
	(0.150)	(0.149)	(0.147)	(0.146)
constant	7.088 ***	7.088 ***	7.083 ***	7.082 ***
	(0.000)	(0.000)	(0.000)	(0.000)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	7170	7170	7170	7170
Adj.R2	0.139	0.139	0.139	0.139

Table 2.11 Continued

Panel B. Cash compensation and Interaction with Performance measure								
Performance measure used:	1yr excess stock return t-1				ROA (ind.adj.) t-1			
Dependent variable: log(cash compensation)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
[A]: Fraction of outside directors	0.079	0.077	0.08	0.078	0.089	0.087	0.091	0.089
	(0.458)	(0.474)	(0.451)	(0.467)	(0.428)	(0.438)	(0.419)	(0.428)
[B]: Fraction of banker directors (BD)		0.164				0.17		
		(0.498)				(0.530)		
[C]: Fraction of affiliated BD			-0.315	-0.219			-0.45	-0.337
			(0.538)	(0.680)			(0.412)	(0.560)
[D]: Fraction of nonaffiliated BD				0.205				0.221
				(0.404)				(0.416)
PERFORMANCE t-1 * [A]	-0.054	-0.053	-0.055	-0.054	-0.308	-0.311	-0.313	-0.316
	(0.454)	(0.461)	(0.450)	(0.457)	(0.608)	(0.606)	(0.603)	(0.601)
PERFORMANCE t-1 * [B]		0.015				-0.247		
		(0.950)				(0.886)		
PERFORMANCE t-1 * [C]			0.103	0.108			2.714	2.361
			(0.648)	(0.745)			(0.677)	(0.724)
PERFORMANCE t-1 * [D]				0.01				-0.417
				(0.966)				(0.805)
PERFORMANCE t-1	0.084	0.083	0.084	0.083	0.309	0.313	0.311	0.315
	(0.140)	(0.143)	(0.139)	(0.142)	(0.555)	(0.551)	(0.553)	(0.548)
Size: log(Total Assets) t-1	0.027	0.027	0.027	0.026	0.02	0.02	0.02	0.02
	(0.484)	(0.489)	(0.486)	(0.491)	(0.600)	(0.607)	(0.601)	(0.611)
BE/ME t-1	-0.053	-0.053	-0.053	-0.053	-0.083**	-0.083**	-0.083**	-0.083**
	(0.186)	(0.184)	(0.186)	(0.184)	(0.028)	(0.027)	(0.028)	(0.027)
Idiosyncratic risk t-1	-2.203*	-2.2*	-2.208*	-2.204*	-2.144*	-2.138*	-2.146*	-2.14*
	(0.057)	(0.057)	(0.057)	(0.056)	(0.058)	(0.059)	(0.058)	(0.058)
1{Chairman CEO}	0.034*	0.034*	0.034*	0.034*	0.035*	0.034*	0.035*	0.035*
	(0.070)	(0.073)	(0.068)	(0.071)	(0.070)	(0.072)	(0.067)	(0.069)
Board size	-0.11	-0.109	-0.109	-0.108	-0.11	-0.109	-0.109	-0.108
	(0.171)	(0.173)	(0.173)	(0.177)	(0.171)	(0.174)	(0.175)	(0.179)

Table 2.11 Panel B Continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1{High CEO ownership}	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.993)	(0.992)	(0.994)	(0.993)	(0.991)	(0.990)	(0.990)	(0.989)
Institutional ownership	0.188	0.189	0.188	0.189	0.182	0.183	0.183	0.185
	(0.133)	(0.132)	(0.133)	(0.132)	(0.143)	(0.142)	(0.142)	(0.140)
constant	7.183***	7.183***	7.182***	7.18***	7.242***	7.241***	7.239***	7.238***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	7251	7251	7251	7251	7251	7251	7251	7251
Adj.R2	0.142	0.141	0.141	0.141	0.14	0.14	0.14	0.141

Table 2.12
Cumulative abnormal returns (CARs) on banker directors' appointment announcement

The sample period is 1997-2008. Dependent variable is cumulative abnormal return (-1, 0) for firms that announced commercial banker director's appointment. Returns are calculated based on market-model, where market model is estimated using returns from -150 to -31 days from the announced date. The model uses CRSP equal-weighted index as a proxy for the market portfolio. Daily abnormal returns are accumulated to obtain CAR from day -1 to day +0, where 0 is the day of announcement. Confounding events such as mergers and acquisitions, earnings announcements, restatements, and class action lawsuits within +1/-1 day of the announcement day are excluded from the sample. 1{ Affiliated BD} is an indicator variable where the value is one when affiliated commercial banker director was announced and zero otherwise, 1 yr excess stock perf. stands for annualized monthly stock returns in excess of S&P500 return, KMV EDF is the estimated default frequency from Moody's data, Ind.Rel.Leverage is the industry adjusted leverage, idiosyncractic risk is the sigma created as in Bushman et al. (2010) using 1 year daily stock returns, Cash flow is CF/k, and Ln(assets) is proxying for firm size. Industry is defined using Fama-French 49 industry classification. *, **, and *** indicate the significance at the10%, 5%, and 1% level, respectively. P-values are in parentheses. Standard errors are clustered at the firm level.

Dependent variable: CAR[-1,0] using Equal Weighted market model							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1{Affiliated BD}	0.013	0.013	0.006	-0.011	-0.002	0.024	0.061
	(0.26)	(0.23)	(0.55)	(0.48)	(0.92)	(0.23)	(0.29)
1yr excess stock return	0.013	0.019	0.013	0.014	0.014	0.013	0.013
	(0.43)	(0.29)	(0.41)	(0.40)	(0.40)	(0.42)	(0.40)
KMV Expected Default risk	0.029 *	0.03 *	0.028 *	0.029 *	0.03 *	0.029 *	0.03 *
	(0.08)	(0.07)	(0.09)	(0.08)	(0.07)	(0.08)	(0.08)
Ind. Rel.Leverage	-0.059	-0.062	-0.068	-0.071	-0.063	-0.062	-0.063
	(0.22)	(0.19)	(0.18)	(0.18)	(0.20)	(0.21)	(0.21)
idiosyncratic risk	0.089	0.003	0.043	0.062	-0.042	0.083	0.079
	(0.87)	(1.00)	(0.94)	(0.91)	(0.95)	(0.88)	(0.89)
Cash Flow	-0.024 *	-0.023 *	-0.024 *	-0.023 *	-0.024 *	-0.022	-0.025 *
	(0.07)	(0.08)	(0.08)	(0.09)	(0.07)	(0.13)	(0.07)
Ln(Assets)	0	0	-0.001	0	0	-0.001	0.001
	(0.91)	(0.92)	(0.84)	(0.94)	(0.98)	(0.85)	(0.81)
1{Affiliated BD} * 1yr excess stock return		-0.058 **					
		(0.03)					

Table 2.12 Continued

		(1)	(2)	(3)	(4)	(5)	(6)	(7)
1{Affiliated BD} *	KMV Expected Default risk			0.036				
				(0.13)				
1{Affiliated BD} *	Ind.rel.Leverage				0.086			
					(0.10)			
1{Affiliated BD} *	idiosyncratic risk					0.891		
						(0.30)		
1{Affiliated BD} *	Cash Flow						-0.019	
							(0.36)	
1{Affiliated BD} *	Log(Total assets)							-0.005
								(0.42)
constant		0.017	0.017	0.022	0.018	0.017	0.018	0.005
		(0.67)	(0.65)	(0.57)	(0.63)	(0.66)	(0.64)	(0.93)
N		47	47	47	47	47	47	47
Adj.R2		0.312	0.321	0.31	0.311	0.303	0.3	0.304

Table 2.13
KMV EDF risk before and after banker director's appointment

The sample period is 1997-2008. The table shows test of difference between firms that appointed banker directors and control firms on industry median adjusted KMV EDF before and after the CBD appointment announcement year, where t = 0 is the year when the commercial banker director was appointed. The dot values are average values and significance test is between firms where commercial banker directors are appointed and control firms. ^ denotes significance level at 10% for one-tailed test, and *, **, and *** represent significance level at 10%, 5%, and 1% level, respectively.

Panel A. Pre/Post KMV EDF (industry median adjusted) for firms with and without CBD

Year from BD appointment	CBD firms (N = 47): A	Firms with CBD (N = 77): B	Test of difference (A-B) (p-value)
	mean	mean	t-test
-4	0.200516	0.16516	0.118 (0.9065)
-3	0.129724	0.16131	-0.1529 (0.8788)
-2	0.08345	0.0834	0.0003 (0.9997)
-1	0.163194	0.11632	0.2874 (0.7743)
0	0.653527	0.15686	0.9244 (0.3599)
1	0.631553	0.2141	0.9787 (0.3325)
2	0.68482	0.16633	1.157 (0.2541)
3	0.625074	0.19403	1.0178 (0.3159)

Panel B. Pre/Post kmv edf (industry median adjusted) Difference-in-Difference test

Year around BD appointment	CBD firms (N = 47): A	Control Firms (N = 76): B	Test of difference (A-B) (p-value)	
	mean	mean	t-test	
(-1, 0)	0.487426	0.03858	1.0021 (0.3211)	
(-1, +1)	0.452639	0.093968	0.997 (0.3228)	
(-1, +2)	0.473832	0.012175	1.4124 (0.1645)	^
(-1, +3)	0.376212	0.010331	0.84 (0.4066)	

Table 2.14
Endogeneity Issue : Likelihood of forced turnover and banker directors

The sample period is 1997-2008. Replication of Table 2.3 Panel B, using change in industry median adjusted ROA from t= -2 to t= -1, where t = 0 is the year of CEO turnover for performance measure.

Panel A. using Change in ROA for Performance measure							
Dep. Variable: 1{Forced CEO turnover}							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
director variables							
[A]: Fraction of outside directors	-0.197	-0.232	-0.218	-0.197	-0.18	-0.221	-0.207
	(0.583)	(0.519)	(0.545)	(0.582)	(0.616)	(0.538)	(0.565)
[B]: Fraction of banker directors		0.407	0.412				
		(0.794)	(0.792)				
[C]: Fraction of affiliated banker director				-20.531**	-20.537**	-20.516**	-20.53**
				(0.021)	(0.021)	(0.021)	(0.021)
[D]: Fraction of nonaffiliated banker director						0.928	0.932
						(0.552)	(0.550)
Change ROA (ind.adj.)* [A]	0.363		0.328		0.361		0.329
	(0.345)		(0.352)		(0.345)		(0.350)
Change ROA (ind.adj.)* [B]		-10.347**	-10.147**				
		(0.010)	(0.011)				
Change ROA (ind.adj.)* [C]				-209.312***	-209.374***	-210.292***	-210.333***
				(0.000)	(0.000)	(0.000)	(0.000)
Change ROA (ind.adj.)* [D]						-9.592**	-9.394**
						(0.019)	(0.021)
controls							
Change ROA (ind.adj.)	-0.677**	-0.313**	-0.61**	-0.348**	-0.672**	-0.312**	-0.61**
	(0.026)	(0.030)	(0.029)	(0.029)	(0.027)	(0.030)	(0.029)
idiosyncratic risk	20.735***	20.899***	20.823***	20.678***	20.578***	20.748***	20.67***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Size: log(Total Assets)	0.056	0.054	0.053	0.059	0.058	0.056	0.055
	(0.205)	(0.226)	(0.232)	(0.182)	(0.188)	(0.209)	(0.215)

Table 2.14 Panel A Continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1{CEO retirement age}	-0.9***	-0.912***	-0.912***	-0.927***	-0.927***	-0.938***	-0.938***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
CEO tenure	-0.037***	-0.036***	-0.036***	-0.037***	-0.037***	-0.036***	-0.036***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
1{Chairman CEO}	-0.409***	-0.402***	-0.404***	-0.404***	-0.406***	-0.4***	-0.402***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1{High CEO ownership}	-0.014	-0.011	-0.012	-0.012	-0.013	-0.012	-0.014
	(0.968)	(0.975)	(0.972)	(0.973)	(0.971)	(0.972)	(0.969)
constant	-28.186	-31.666***	-27.15	-29.981***	-29.715***	-28.181	-29.165***
	.	(0.000)	.	(0.000)	(0.000)	.	(0.000)
N	12228	12228	12228	12228	12228	12228	12228
Pseudo.R2	0.053	0.054	0.054	0.054	0.054	0.056	0.056

Panel B. using 2 lags of ROA for Performance measure							
Dependent Variable: 1{Forced CEO turnover}							
director variables							
[A]: Fraction of outside directors	-0.108	-0.195	-0.124	-0.166	-0.093	-0.185	-0.114
	(0.767)	(0.585)	(0.734)	(0.640)	(0.799)	(0.604)	(0.755)
[B]: Fraction of banker directors		0.552	0.551				
		(0.744)	(0.744)				
[C]: Fraction of affiliated banker director				-11.667	-11.619	-11.617	-11.572
				(0.240)	(0.242)	(0.245)	(0.247)
[D]: Fraction of nonaffiliated banker director						1.049	1.045
						(0.535)	(0.536)
interactions							
ROA (ind.adj.) t-2 * [A]	-1.861		-1.802		-1.869		-1.798
	(0.337)		(0.347)		(0.336)		(0.348)

Table 2.14 Panel B Continued

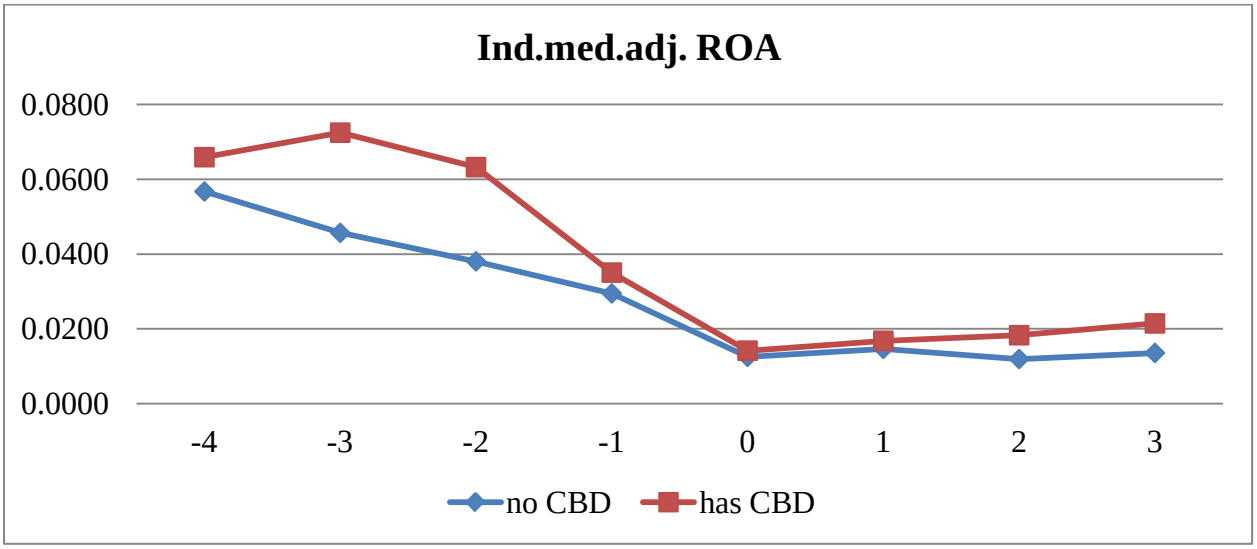
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ROA (ind.adj.) t-2 * [B]		8.002	7.746				
		(0.470)	(0.479)				
ROA (ind.adj.) t-2 * [C]				-66.452**	-67.916**	-66.929**	-68.282**
				(0.023)	(0.022)	(0.021)	(0.020)
ROA (ind.adj.) t-2 * [D]						8.363	8.124
						(0.452)	(0.459)
controls							
ROA (ind.adj.) t-2	1.002	-0.725**	0.913	-0.691**	1.009	-0.728**	0.907
	(0.589)	(0.012)	(0.620)	(0.018)	(0.587)	(0.012)	(0.622)
idiosyncratic risk	19.829***	19.514***	19.846***	19.34***	19.686***	19.349***	19.682***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Size: log(Total Assets)	0.066	0.062	0.066	0.065	0.069	0.065	0.068
	(0.129)	(0.151)	(0.131)	(0.135)	(0.115)	(0.137)	(0.118)
1{CEO retirement age}	-0.918***	-0.91***	-0.916***	-0.913***	-0.919***	-0.912***	-0.918***
	(0.006)	(0.007)	(0.007)	(0.007)	(0.006)	(0.007)	(0.006)
CEO tenure	-0.037***	-0.037***	-0.036***	-0.037***	-0.037***	-0.037***	-0.037***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
1{Chairman CEO}	-0.408***	-0.411***	-0.413***	-0.403***	-0.405***	-0.409***	-0.411***
	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
1{High CEO ownership}	-0.002	-0.008	-0.007	-0.002	-0.002	-0.011	-0.01
	(0.995)	(0.982)	(0.984)	(0.995)	(0.996)	(0.976)	(0.978)
constant	-29.612	-27.216***	-28.579***	-28.521***	-28.641	-28.481***	-28.595
	.	(0.000)	(0.000)	(0.000)	.	(0.000)	.
N	12591	12591	12591	12591	12591	12591	12591
Pseudo.R2	0.053	0.053	0.053	0.053	0.054	0.054	0.054

Figure 2.1 ROA performance before and after CEO turnover

The sample period is 1997-2008. The figure shows industry median adjusted ROA graph before and after the CEO turnover event, where t = 0 is the year when the CEO was forced out. The values are winsorized at 1% and 99% level and the dot values are average values. ^^ and ^ denotes significance level at 5% and 10% for one-tailed test, respectively and *, **, and *** represent significance level at 10%, 5%, and 1% level, respectively.

Panel A. ROA (industry median adjusted) and existence of commercial banker directors (CBDs) around CEO turnover

*For interpretation of the references to color in this and all other figures, the reader is referred to the electronic version of this dissertation.



Panel B. Difference in Difference of ROA (industry median adjusted) and existence of commercial banker directors (CBDs) around CEO turnover

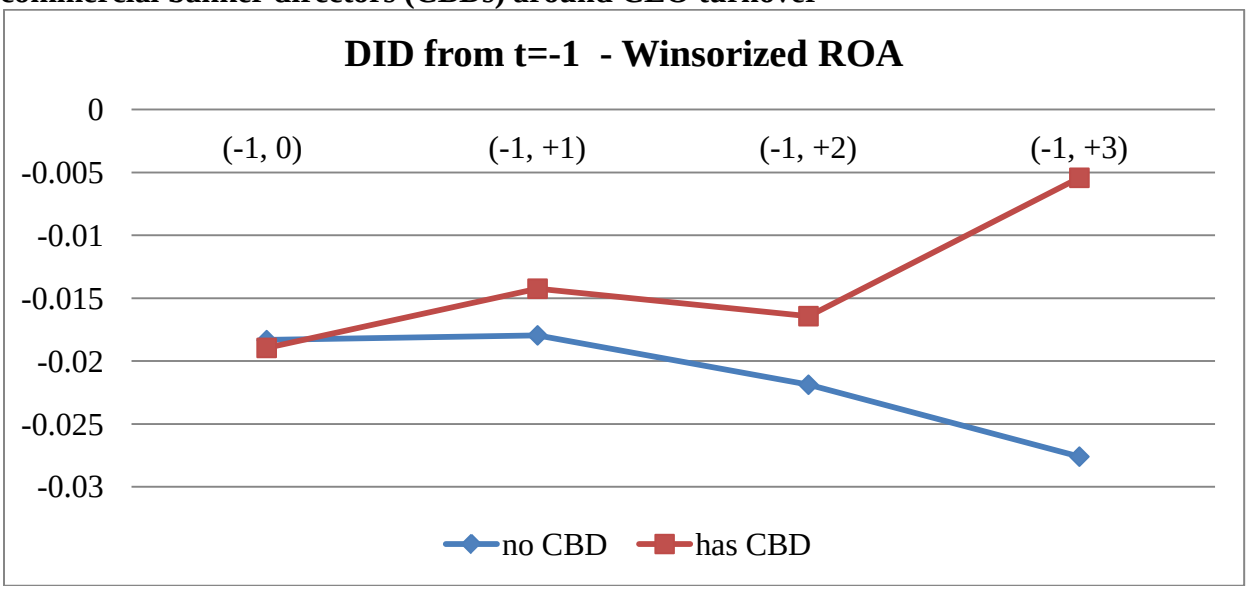
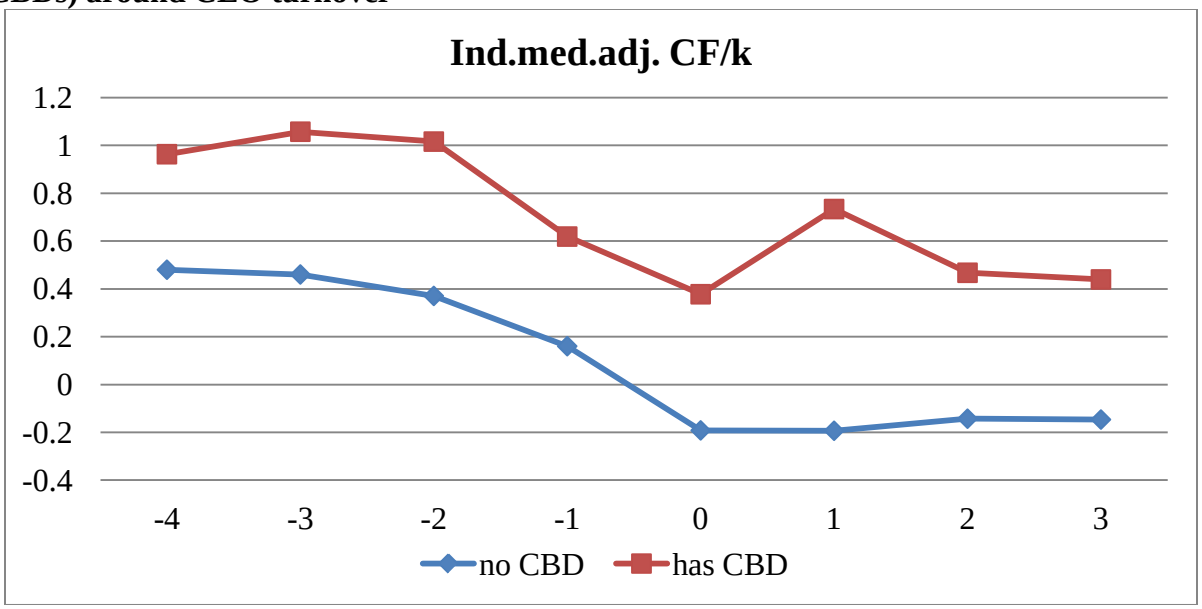


Figure 2.2 Cash flow before and after CEO turnover

The sample period is 1997-2008. The figure shows industry median adjusted CF/k graph before and after the CEO turnover event, where t = 0 is the year when the CEO was forced out. The values are winsorized at 1% and 99% level and the dot values are average values. ^^ and ^ denotes significance level at 5% and 10% for one-tailed test, respectively and *, **, and *** represent significance level at 10%, 5%, and 1% level, respectively.

Panel A. CF/k (industry median adjusted) and existence of commercial banker directors (CBDs) around CEO turnover



Panel B. Changes in CF/K (industry median adjusted) and existence of commercial banker directors (CBDs) around CEO turnover

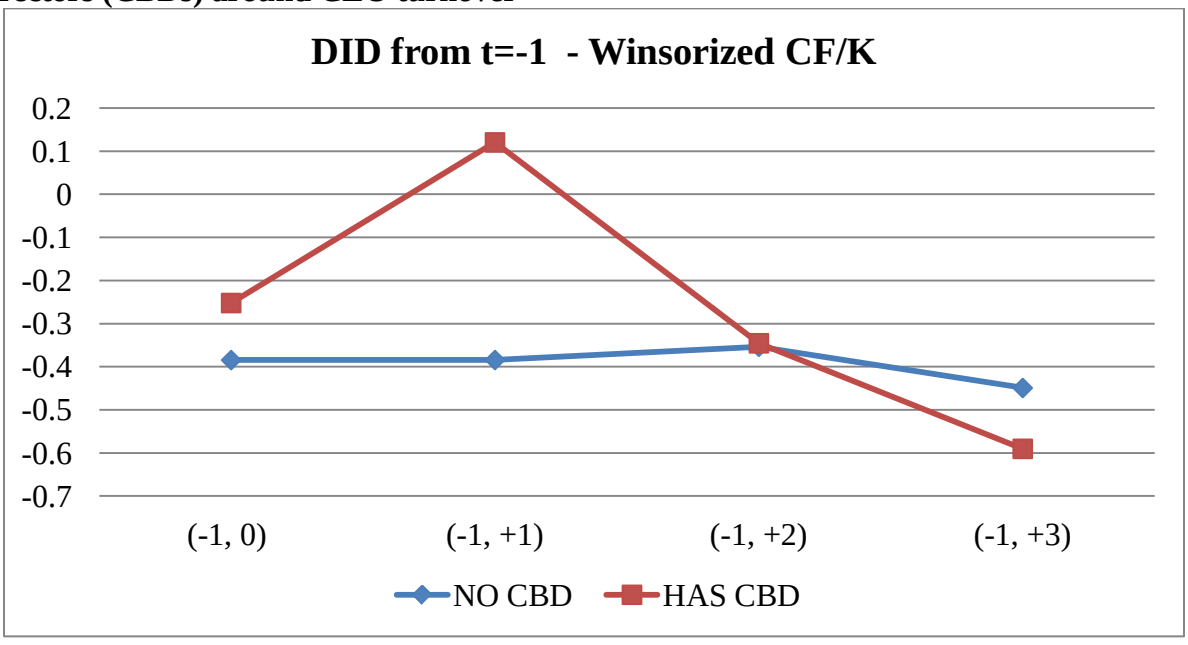
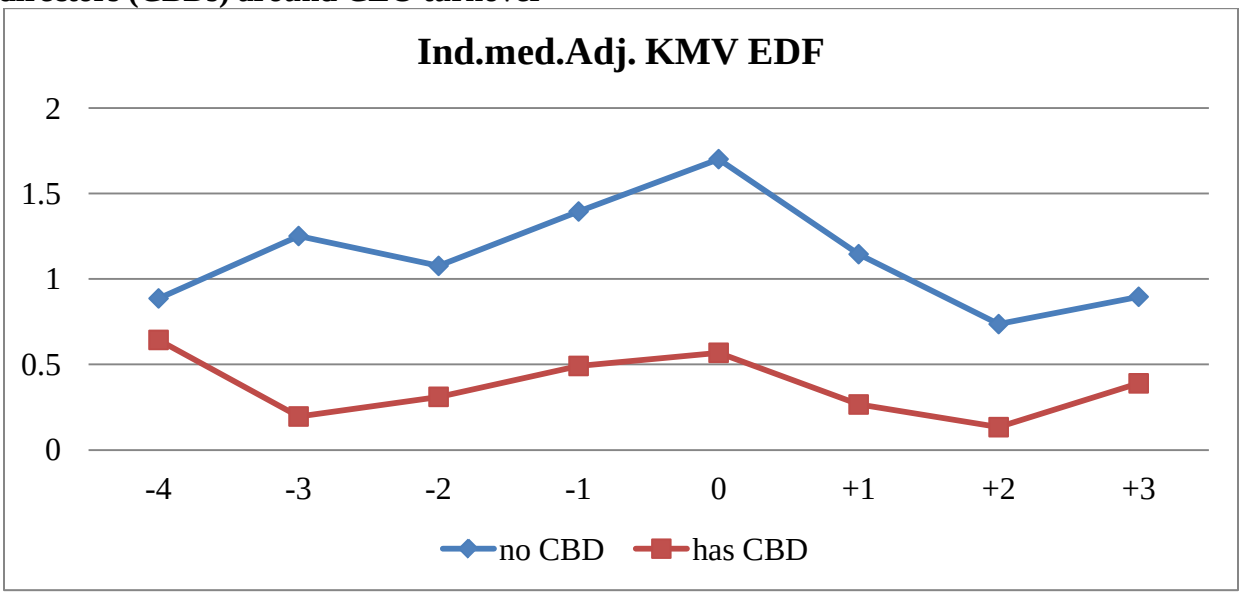


Figure 2.3 KMV EDF before and after CEO turnover

The sample period is 1997-2008. The figure shows industry median adjusted KMV EDF graph before and after the CEO turnover event, where t = 0 is the year when the CEO was forced out. ^^ and ^ denotes significance level at 5% and 10% for one-tailed test, respectively and *, **, and *** represent significance level at 10%, 5%, and 1% level, respectively.

Panel A. KMV EDF (industry median adjusted) and existence of commercial banker directors (CBDs) around CEO turnover



Panel B. Changes in KMV EDF (industry median adjusted) and existence of commercial banker directors (CBDs) around CEO turnover

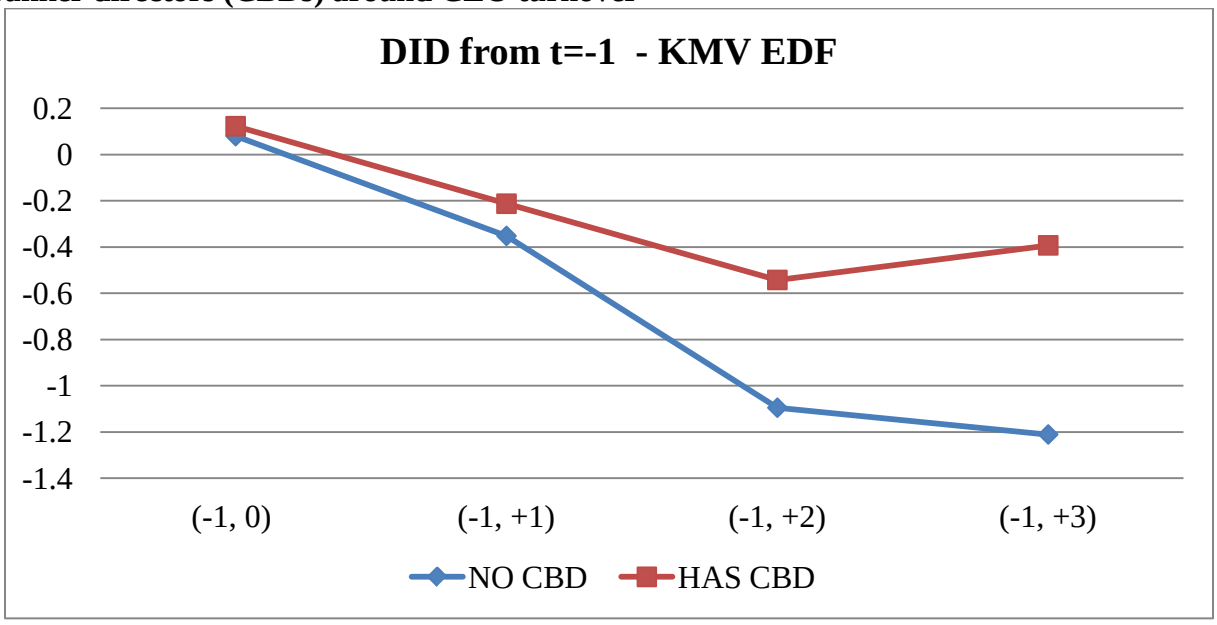
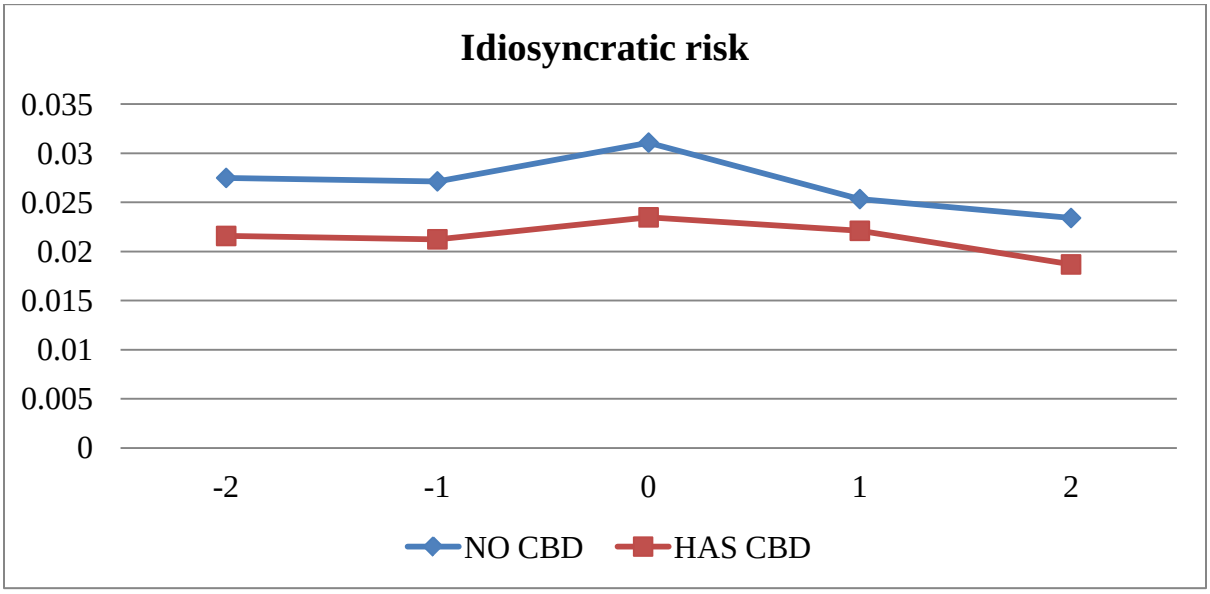


Figure 2.4 Idiosyncratic risk before and after CEO turnover

The sample period is 1997-2008. The figure shows Idioysncratic risk (not-industry adjusted) graph before and after the CEO turnover event, where t = 0 is the year when the CEO was forced out. ^^ and ^ denotes significance level at 5% and 10% for one-tailed test, respectively and *, **, and *** represent significance level at 10%, 5%, and 1% level, respectively.

Panel A. Idiosyncratic risk and existence of commercial banker directors (CBDs) around CEO turnover



Panel B. Changes in Idiosyncratic risk (non-industry adjusted) and existence of commercial banker directors (CBDs) around CEO turnover

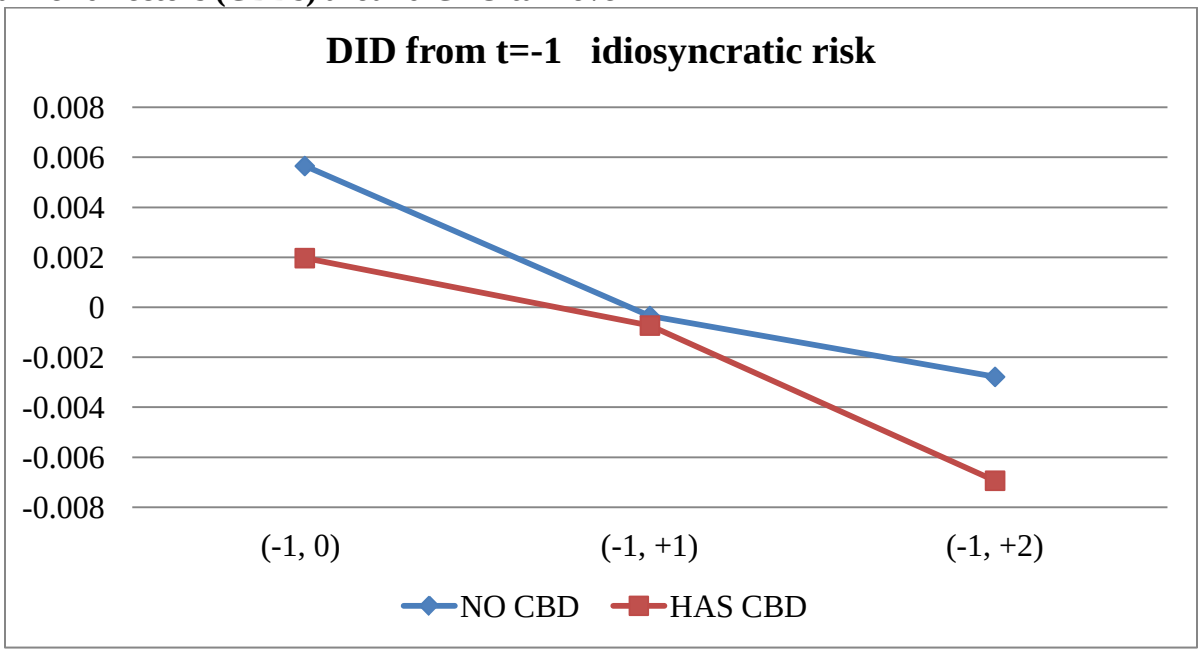
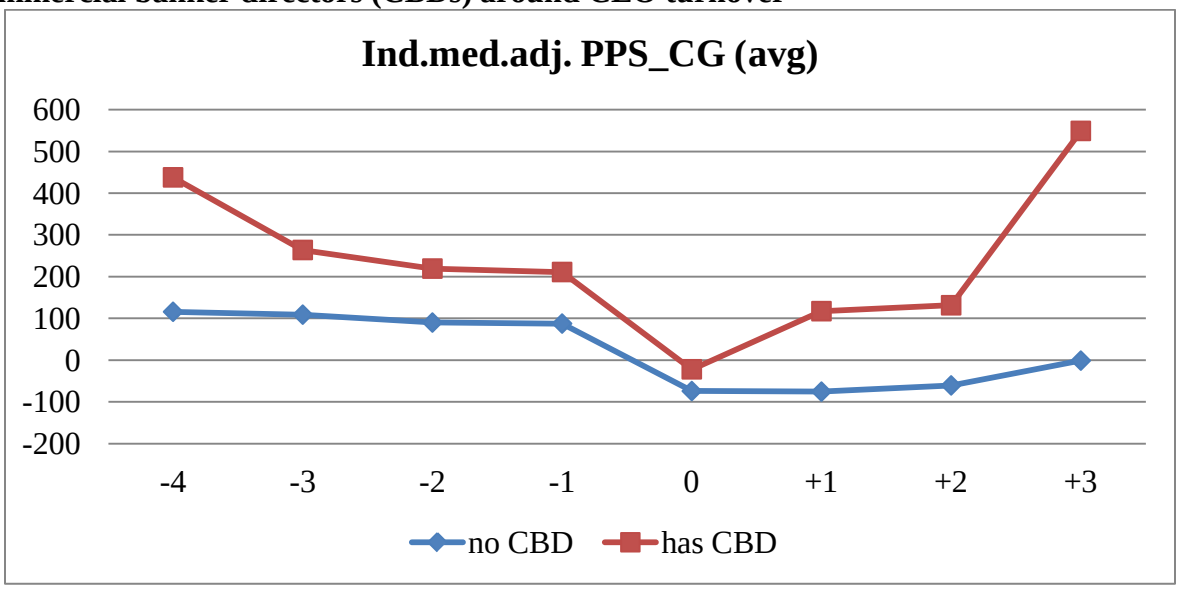


Figure 2.5. Pay-performance-sensitivity before and after CEO turnover

The sample period is 1997-2008. The figure shows industry median adjusted pay-performance-sensitivity (PPS) by Core and Guay (2002), represented as PPS_CG, graph before and after the CEO turnover event, where t = 0 is the year when the CEO was forced out. The dot values are average values. ^^ and ^ denotes significance level at 5% and 10% for one-tailed test, respectively and *, **, and *** represent significance level at 10%, 5%, and 1% level, respectively.

Panel A. Pay-performance-sensitivity (industry median adjusted) and existence of commercial banker directors (CBDs) around CEO turnover



Panel B. Changes in pay-performance-sensitivity (PPS) (industry median adjusted) and existence of commercial banker directors (CBDs)

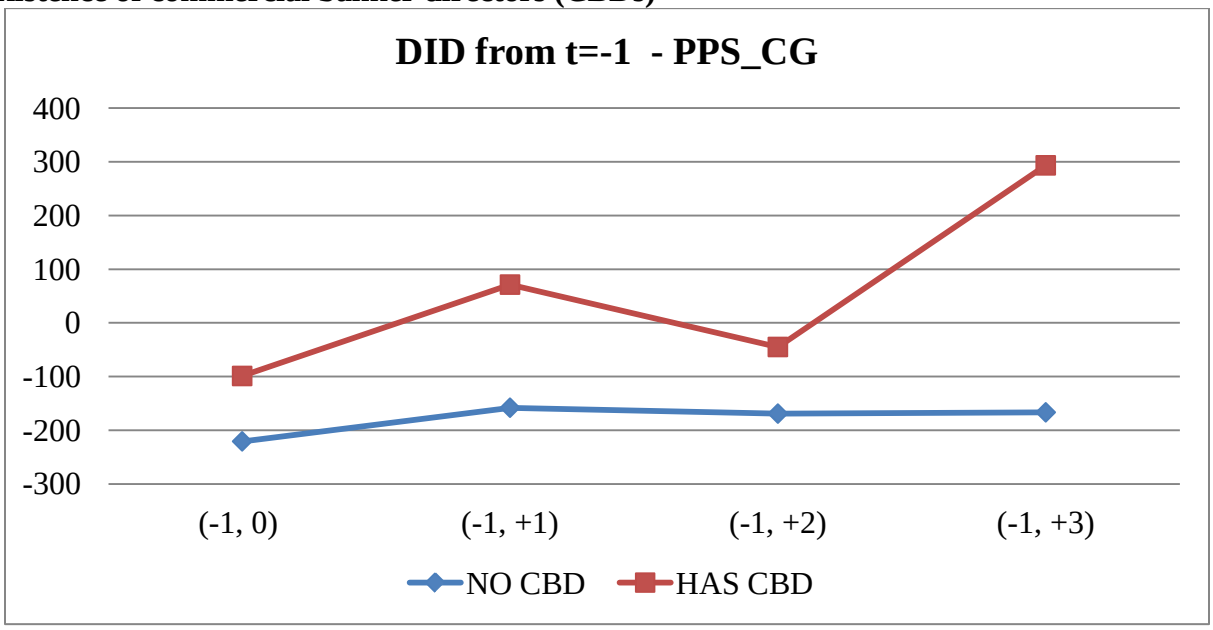
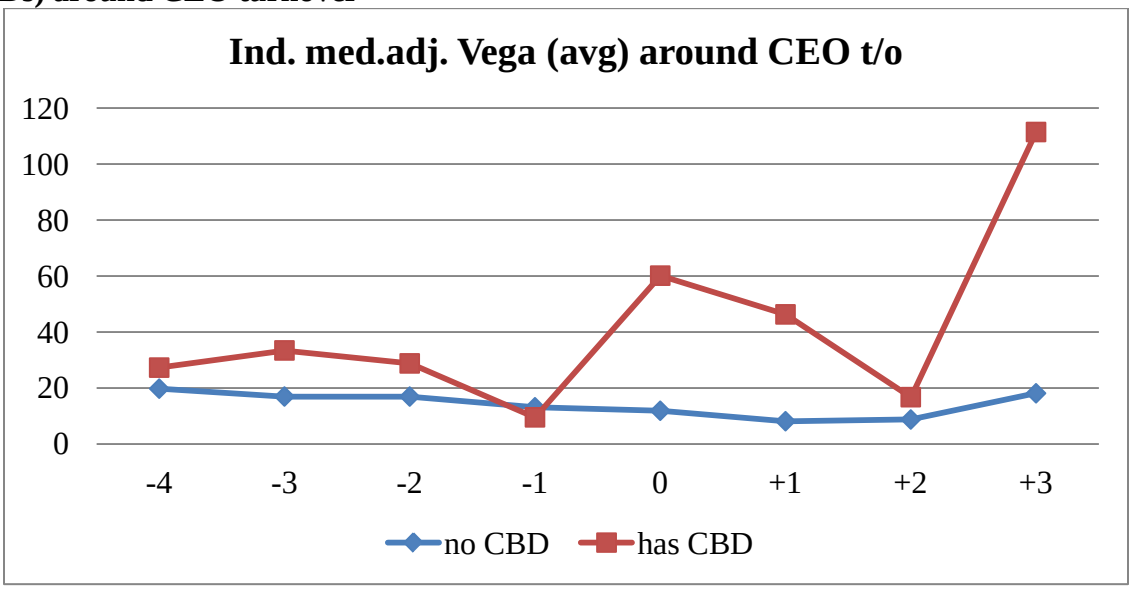


Figure 2.6. Vega before and after the CEO turnover

The sample period is 1997-2008. The figure shows industry median adjusted vega graph before and after the CEO turnover event, where t = 0 is the year when the CEO was forced out. The dot values are average values. ^ denotes significance level at 10% for one-tailed test, and *, **, and *** represent significance level at 10%, 5%, and 1% level, respectively.

Panel A. Vega (industry median adjusted) and existence of commercial banker directors (CBDs) around CEO turnover



Panel B. Changes in Vega (industry median adjusted) and existence of commercial banker directors (CBDs)

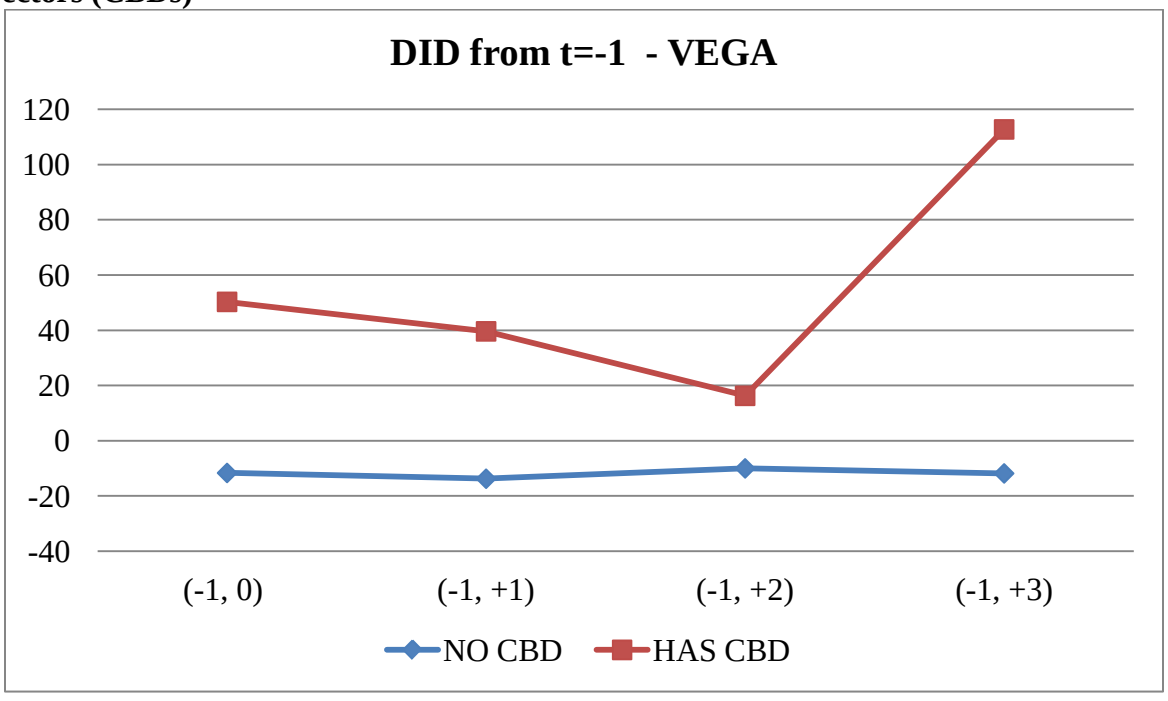
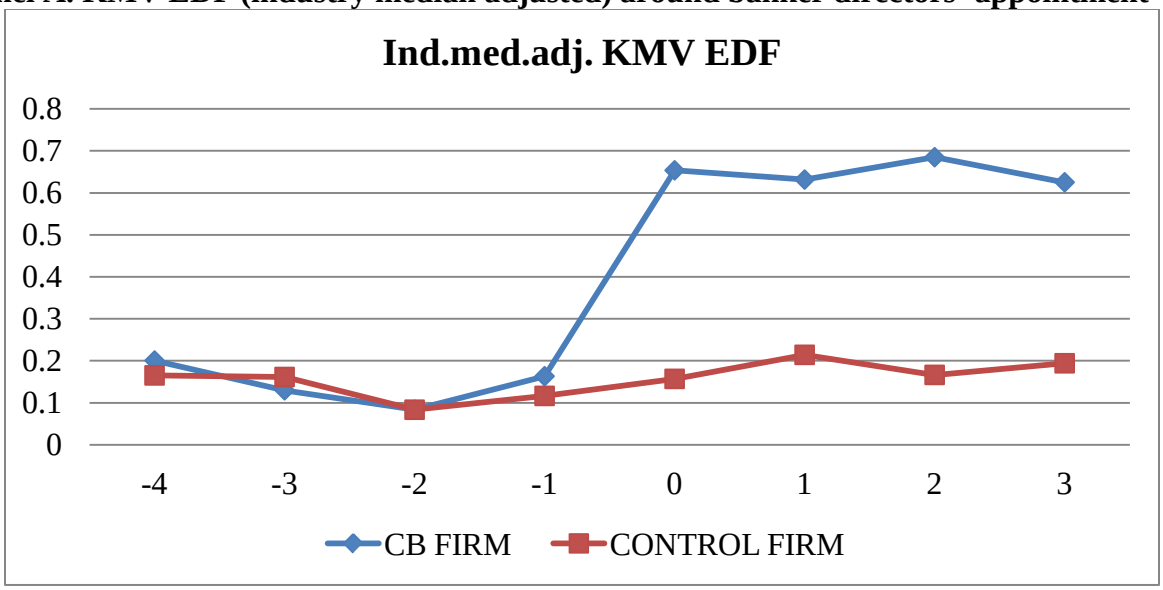


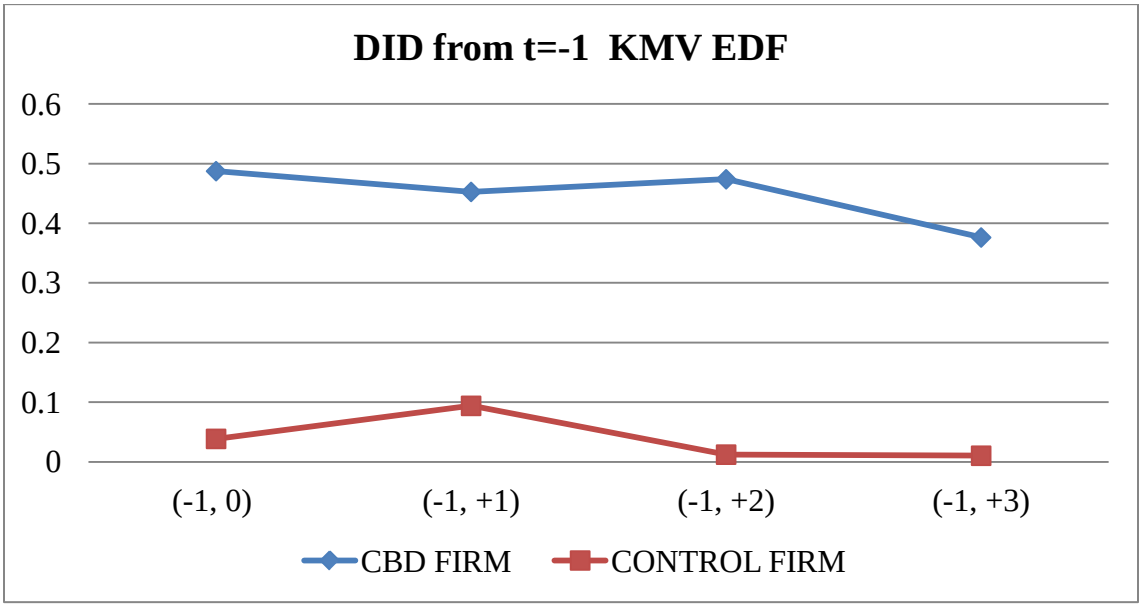
Figure 2.7 KMV EDF before and after banker directors' appointment

The sample period is 1997-2008. The figure shows industry median adjusted KMV EDF graph before and after the CBD appointment announcement year, where t = 0 is the year when the commercial banker director was appointed. The dot values are average values and significance test is between firms where commercial banker directors are appointed and control firms. ^ denotes significance level at 10% for one-tailed test, and *, **, and *** represent significance level at 10%, 5%, and 1% level, respectively.

Panel A. KMV EDF (industry median adjusted) around banker directors' appointment



Panel B. Changes in KMV EDF (industry median adjusted) around banker directors' appointment



Appendix C

TABLES AND FIGURES OF CHAPTER 3

Table 3.1
Summary Statistics

The sample period is between year 1992 and 2009 in Execucomp data. The sample consists of 15,323 firm-years.

Panel A. Summary statistics for variables used

	N	Mean	Stdev	25%	Median	75%
1{Forced CEO Turnover}	15323	0.023	0.149	0.000	0.000	0.000
%TRA	15323	0.173	0.124	0.079	0.146	0.238
1{EPS<0}	15323	0.103	0.304	0.000	0.000	0.000
%DED	15323	0.086	0.098	0.000	0.056	0.140
1 year Stock Performance	15323	0.209	0.783	-0.158	0.101	0.388
ROA	15323	0.143	0.125	0.096	0.143	0.198
Idiosyncratic risk	15323	0.116	0.060	0.074	0.102	0.140
Size:Ln(Total Assets)	15323	7.040	1.583	5.909	6.893	8.014
1{CEO in retirement age}	15323	0.086	0.280	0.000	0.000	0.000
1{CEO high ownership}	15323	0.127	0.333	0.000	0.000	0.000
CEO tenure	15323	7.792	7.643	2.000	5.000	10.000
1{Chairman CEO}	15323	0.596	0.491	0.000	1.000	1.000
R&D Margin	9821	0.218	5.344	0.010	0.037	0.117

Table 3.1 Continued

Panel B. Correlation table

	1{Forced}	[A]	[B]	[C]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]
%TRA	-0.0172	1										
1{EPS<0}	0.0559*	-0.0466*	1									
%DED	-0.0039	-0.0811*	-0.0138	1								
1 year Stock Performance	-0.0597*	0.2180*	-0.0408*	0.0066	1							
ROA	-0.0436*	0.0400*	-0.5206*	0.0317*	0.0637*	1						
Idiosyncratic risk	0.0257*	0.3128*	0.3554*	-0.0515*	0.1906*	-0.2967*	1					
Size:Ln(Total Assets)	-0.0126	-0.0530*	-0.1821*	-0.0257*	-0.0882*	0.1006*	-0.4361*	1				
1{CEO in retirement age}	-0.0312*	-0.0318*	-0.0062	-0.0103	-0.0088	0.0019	-0.0506*	0.017	1			
1{CEO high ownership}	-0.0295*	-0.0656*	-0.0096	-0.0513*	0.0072	0.0279*	0.0719*	-0.1928*	0.0629*	1		
CEO tenure	-0.0519*	-0.0375*	-0.0381*	-0.0235*	-0.0045	0.0459*	-0.0193	-0.0819*	0.1804*	0.3414*	1	
1{Chairman CEO}	-0.0364*	0.0671*	-0.0915*	-0.0038	-0.0421*	0.0713*	-0.1223*	0.3022*	0.0885*	0.0749*	0.1472*	1
R&D Margin	0	-0.0211	0.0806*	-0.0057	0.0027	-0.1493*	0.0439*	-0.0550*	0.001	0.0018	-0.0068	-0.0262*

* indicates that the correlation coefficient is significantly different at 1% level.

Table 3.2
Sample distribution of data by year of CEO turnovers

The sample period is 1992 - 2009. There are total of 31,262 firm-years in our sample, 817 of which are classified as forced turnovers. The numbers in parentheses are fraction of data based on the last "Total" column.

Year	No Turnover		Turnover		Forced		Voluntary		Total
1992	1,303	(93.61%)	89	(6.39%)	12	(0.86%)	77	(5.53%)	1,392
1993	1,423	(90.98%)	141	(9.02%)	30	(1.92%)	111	(7.10%)	1,564
1994	1,466	(89.61%)	170	(10.39%)	34	(2.08%)	136	(8.31%)	1,636
1995	1,568	(90.90%)	157	(9.10%)	39	(2.26%)	118	(6.84%)	1,725
1996	1,676	(90.35%)	179	(9.65%)	50	(2.70%)	129	(6.95%)	1,855
1997	1,717	(89.85%)	194	(10.15%)	47	(2.46%)	147	(7.69%)	1,911
1998	1,715	(89.23%)	207	(10.77%)	50	(2.60%)	157	(8.17%)	1,922
1999	1,615	(87.11%)	239	(12.89%)	71	(3.83%)	168	(9.06%)	1,854
2000	1,618	(92.14%)	138	(7.86%)	28	(1.59%)	110	(6.26%)	1,756
2001	1,644	(93.73%)	110	(6.27%)	45	(2.57%)	65	(3.71%)	1,754
2002	1,533	(89.86%)	173	(10.14%)	47	(2.75%)	126	(7.39%)	1,706
2003	1,544	(89.30%)	185	(10.70%)	49	(2.83%)	136	(7.87%)	1,729
2004	1,499	(87.46%)	215	(12.54%)	54	(3.15%)	161	(9.39%)	1,714
2005	1,474	(88.80%)	186	(11.20%)	54	(3.25%)	132	(7.95%)	1,660
2006	1,544	(88.63%)	198	(11.37%)	57	(3.27%)	141	(8.09%)	1,742
2007	1,508	(88.81%)	190	(11.19%)	55	(3.24%)	135	(7.95%)	1,698
2008	1,663	(89.89%)	187	(10.11%)	73	(3.95%)	114	(6.16%)	1,850
2009	1,706	(95.09%)	88	(4.91%)	22	(1.23%)	66	(3.68%)	1,794
Total	28,216	(90.26%)	3,046	(9.74%)	817	(2.61%)	2229	(7.13%)	31,262

Table 3.3
Likelihood of forced turnover and liquidity shock using Linear Probability

Total sample consists of 15,323 firm-years in both Panels. The dependent variable is forced CEO turnover, defined as one if there is a forced turnover and zero otherwise. Forced turnover classification follows Parrino (1997) as described in Appendix II.A Section B. Please see Appendix II.A Section A of Variable Definition section for detailed definition of the variables used. Columns (1) – (3) uses all the data in the sample, while columns (4) – (6) uses data before the decimalization period and (7) – (9) uses data after the decimalization period. In Panel A, linear probability regressions are performed with industry and year dummies included in all specifications. Panel A.1 runs regression with all data while Panel A.2 reports regressions where data is divided before and after decimalization. In Panel B, linear probability regressions are performed with firm fixed effect and year dummies are included in all specifications. Panel B.1 reports regressions with all data while Panel B.2 reports regressions where data is divided before and after decimalization. Panel C is same as Panel B, except that fraction of independent directors and its interaction with negative EPS dummy are included as control variables. *, **, and *** indicate the significance at the 10%, 5%, and 1% level, respectively. T-statistics are reported under the coefficients in parentheses. Standard errors are clustered at the firm level.

Table 3.3 Continued

Panel A.1 Linear probability model with industry and year fixed effects						
Dependent Variable: 1{Forced CEO Turnover}						
Sample Period:	All					
Linear probability model						
	(1)		(2)		(3)	
%TRA	-0.026	**	-0.026	**	-0.028	**
	-(2.21)		-(2.16)		-2.36	
1{EPS<0}	0.003		0.006		-0.015	
	(0.26)		(0.55)		-(1.06)	
1{EPS<0}*%TRA	0.103	**	0.1	**	0.096	*
	(2.06)		(2.00)		(1.89)	
%DED			0.007		0.001	
			(0.39)		(0.05)	
1{EPS<0}*%DED			-0.036		-0.011	
			-(0.72)		-(0.23)	
%QIX					-0.009	
					-(0.79)	
1{EPS<0}*%QIX					0.057	*
					(1.88)	
1year stock performance	-0.012	***	-0.012	***	-0.012	***
	-(7.26)		-(7.26)		-7.26	
ROA	-0.011		-0.01		-0.015	
	-(0.84)		-(0.79)		-1.13	
idiosyncratic risk	0.034		0.034		0.037	
	(1.21)		(1.17)		1.24	
Size:ln(Total Assets)	0		0		0	
	(0.14)		(0.16)		0.07	
1{CEO retirement Age}	-0.011	***	-0.011	***	-0.011	***
	-(3.88)		-(3.91)		-3.92	
1{High CEO ownership}	-0.007	**	-0.007	**	-0.008	**
	-(2.32)		-(2.29)		-2.41	
CEO Tenure	-0.001	***	-0.001	***	-0.001	***
	-(5.81)		-(5.79)		-5.92	
1{Chairman CEO}	-0.008	***	-0.008	***	-0.008	***
	-(2.77)		-(2.76)		-2.61	
constant	0.068	**	0.067	**	0.074	**
	(2.02)		(1.98)		2.12	
Industry FE	Yes		Yes		Yes	
Year FE	Yes		Yes		Yes	
N	15323		15323		15323	
Adj.R2	0.014		0.014		0.014	

Table 3.3 Panel A Continued

Panel A.2 Linear probability model with industry and year fixed effects													
Dependent Variable: 1{Forced CEO Turnover}													
Sample Period:	Decimalization												
Linear probability model	Before						After						
	(4)		(5)		(6)		(7)		(8)		(9)		
%TRA	-0.067	***	-0.067	***	-0.07	***	-0.008		-0.008		-0.017		
	-(3.56)		-(3.56)		-(3.75)		-(0.49)		-(0.47)		-(1.08)		
1{EPS<0}	0.005		-0.004		0.01		0.001		0.008		-0.037	*	
	(0.29)		-(0.17)		(0.45)		(0.06)		(0.50)		-(1.76)		
1{EPS<0}*%TRA	0.08		0.087		0.103		0.108	*	0.117	*	0.141	**	
	(0.70)		(0.76)		(0.84)		(1.65)		(1.80)		(2.17)		
%DED			-0.016		-0.013				0.045		0.03		
			-(0.66)		-(0.56)				(1.44)		(0.92)		
1{EPS<0}*%DED			0.058		0.058				-0.137	**	-0.095		
			(0.75)		(0.75)				-(2.13)		-(1.46)		
%QIX					0.019						-0.021		
					(0.97)						-(1.44)		
1{EPS<0}*%QIX					-0.064						0.091	**	
					-(0.93)						(2.52)		
1year stock performance	-0.013	***	-0.013	***	-0.013	***	-0.01	***	-0.009	***	-0.01	***	
	-(5.58)		-(5.60)		-(5.48)		-(4.88)		-(4.87)		-(4.97)		
ROA	0.002		0		0.004		-0.02		-0.018		-0.025		
	(0.09)		-(0.01)		(0.15)		-(1.20)		-(1.10)		-(1.53)		
idiosyncratic risk	0.122	**	0.121	**	0.13	**	0.001		0.002		0.01		
	(2.31)		(2.30)		(2.45)		(0.02)		(0.06)		(0.29)		
Size:ln(Total Assets)	0.002		0.002		0.002		-0.001		-0.001		-0.001		
	(1.19)		(1.15)		(0.98)		-(0.57)		-(0.60)		-(0.86)		
1{CEO retirement Age}	-0.009	*	-0.009	*	-0.009	*	-0.012	***	-0.012	***	-0.012	***	
	-(1.89)		-(1.86)		-(1.87)		-(3.40)		-(3.41)		-(3.40)		
1{High CEO ownership}	-0.016	***	-0.016	***	-0.015	***	-0.001		-0.001		-0.002		
	-(4.09)		-(4.09)		-(3.85)		-(0.19)		-(0.14)		-(0.45)		

Table 3.3 Panel A.2 Continued

	(4)		(5)		(6)		(7)		(8)		(9)	
CEO Tenure	-0.001	***	-0.001	***	-0.001	***	-0.001	***	-0.001	***	-0.001	***
	-(4.20)		-(4.25)		-(4.20)		-(4.17)		-(4.18)		-(4.32)	
1{Chairman CEO}	-0.002		-0.002		-0.002		-0.012	***	-0.012	***	-0.011	***
	-(0.44)		-(0.42)		-(0.52)		-(3.20)		-(3.20)		-(3.00)	
Constant	0.061		0.065		0.058		0.093	**	0.087	**	0.101	**
	(0.98)		(1.03)		(0.95)		(2.12)		(1.99)		(2.29)	
Industry FE	Yes		Yes		Yes		Yes		Yes		Yes	
Year FE	Yes		Yes		Yes		Yes		Yes		Yes	
N	6125		6125		6125		9198		9198		9198	
Adj.R2	0.019		0.018		0.018		0.013		0.013		0.015	

Table 3.3 Continued

Panel B.1 Linear probability model with firm and year fixed effects						
Dependent Variable: 1{Forced CEO Turnover}						
Sample Period:	All					
Linear probability model						
	(1)		(2)		(3)	
%TRA	-0.027	*	-0.025		-0.025	
	-(1.71)		-(1.61)		-(1.53)	
1{EPS<0}	-0.013		-0.008		-0.039	**
	-(1.06)		-(0.61)		-(2.14)	
1{EPS<0}*%TRA	0.148	**	0.144	**	0.147	**
	(2.49)		(2.41)		(2.47)	
%DED			0.02		0.019	
			(0.79)		(0.71)	
1{EPS<0}*%DED			-0.046		-0.009	
			-(0.84)		-(0.16)	
%QIX					0.011	
					(0.63)	
1{EPS<0}*%QIX					0.077	**
					(2.21)	
1year stock performance	-0.01	***	-0.01	***	-0.01	***
	-(5.46)		-(5.45)		-(5.47)	
ROA	-0.009		-0.008		-0.012	
	-(0.40)		-(0.36)		-(0.54)	
idiosyncratic risk	-0.028		-0.027		-0.013	
	-(0.62)		-(0.59)		-(0.28)	
Size:ln(Total Assets)	0.012	***	0.012	***	0.011	***
	(3.25)		(3.34)		(3.04)	
1{CEO retirement Age}	-0.017	***	-0.017	***	-0.018	***
	-(4.43)		-(4.45)		-(4.48)	
1{High CEO ownership}	-0.011		-0.01		-0.01	
	-(1.64)		-(1.62)		-(1.62)	
CEO Tenure	0.001	*	0.001	*	0.001	*
	(1.72)		(1.73)		(1.73)	
1{Chairman CEO}	-0.007	*	-0.007	*	-0.007	*
	-(1.75)		-(1.74)		-(1.77)	
constant	-0.053	**	-0.058	**	-0.057	**
	-(2.21)		-(2.35)		-(2.33)	
Firm FE	Yes		Yes		Yes	
Year FE	Yes		Yes		Yes	
N	15323		15323		15323	
Adj.R2	0.009		0.009		0.01	

Table 3.3 Panel B Continued

Panel B.2 Linear probability model with firm and year fixed effects												
Dependent Variable: 1{Forced CEO Turnover}												
Sample Period:	Decimalization											
Linear probability model	Before						After					
	(4)		(5)		(6)		(7)		(8)		(9)	
%TRA	-0.104	***	-0.116	***	-0.111	***	0.001		0		0.008	
	-(3.38)		-(3.52)		-(3.45)		(0.04)		(0.01)		(0.34)	
1{EPS<0}	-0.015		-0.019		-0.022		-0.021		-0.012		-0.062	**
	-(0.62)		-(0.46)		-(0.67)		-(1.17)		-(0.66)		-(2.34)	
1{EPS<0}*%TRA	0.105		0.119		0.117		0.179	**	0.188	**	0.221	***
	(0.64)		(0.69)		(0.69)		(2.25)		(2.37)		(2.79)	
%DED			-0.051		-0.038				0.051		0.057	
			-(1.43)		-(1.09)				(1.14)		(1.14)	
1{EPS<0}*%DED			0.045		0.042				-0.16	*	-0.107	
			(0.47)		(0.44)				-(1.96)		-(1.31)	
%QIX			-0.033								0.035	
			-(0.94)								(1.35)	
1{EPS<0}*%QIX			-0.017								0.098	**
			-(0.17)								(2.32)	
1year stock performance	-0.008	***	-0.008	***	-0.008	***	-0.01	***	-0.009	***	-0.009	***
	-(3.10)		-(2.90)		-(2.97)		-(3.75)		-(3.67)		-(3.68)	
ROA	-0.034		-0.032		-0.035		-0.017		-0.015		-0.018	
	-(0.62)		-(0.57)		-(0.64)		-(0.65)		-(0.60)		-(0.74)	
idiosyncratic risk	0.107		0.085		0.099		-0.091		-0.089		-0.057	
	(0.99)		(0.79)		(0.91)		-(1.63)		-(1.58)		-(0.97)	
Size:ln(Total Assets)	0.021	***	0.023	***	0.021	***	0.001		0.002		0.001	
	(2.78)		(2.82)		(2.76)		(0.13)		(0.29)		(0.13)	
1{CEO retirement Age}	-0.02	***	-0.02	***	-0.02	***	-0.022	***	-0.021	***	-0.021	***
	-(2.71)		-(2.68)		-(2.67)		-(4.06)		-(4.04)		-(4.01)	
1{High CEO ownership}	-0.016	**	-0.016	**	-0.016	**	-0.004		-0.004		-0.004	
	-(2.22)		-(2.24)		-(2.25)		-(0.33)		-(0.32)		-(0.29)	

Table 3.3 Panel B.2 Continued

	(1)		(2)		(3)		(4)		(5)		(6)	
CEO Tenure	0		0		0		0.002	***	0.002	***	0.002	***
	(0.66)		(0.62)		(0.63)		(4.24)		(4.19)		(4.23)	
1{Chairman CEO}	-0.01		-0.01		-0.01		-0.011	*	-0.01	*	-0.011	*
	-(1.42)		-(1.41)		-(1.42)		-(1.76)		-(1.69)		-(1.75)	
Constant	-0.115	**	-0.105	**	-0.107	**	0.012		0.001		-0.015	
	-(2.23)		-(2.01)		-(2.07)		(0.21)		(0.02)		-(0.28)	
Firm FE	Yes		Yes		Yes		Yes		Yes		Yes	
Year FE	Yes		Yes		Yes		Yes		Yes		Yes	
N	6125		6125		6125		9198		9198		9198	
Adj.R2	0.012		0.012		0.012		0.009		0.01		0.012	

Table 3.3 Continued

Panel C.1 Linear probability model controlling for independent directors						
Dependent Variable: 1{Forced CEO turnover}						
Sample Period:	All					
Linear probability model						
	(1)		(2)		(3)	
%TRA	-0.011		-0.011		-0.014	
	-(0.50)		-(0.51)		-(0.61)	
1{EPS<0}	-0.003		0.008		-0.002	
	-(0.12)		(0.28)		-(0.07)	
1{EPS<0}*%TRA	0.092	*	0.084	*	0.102	**
	(1.89)		(1.73)		(1.99)	
%DED			0.013		0.009	
			(0.49)		(0.31)	
1{EPS<0}*%DED			-0.096		-0.068	
			-(1.56)		-(1.03)	
%QIX					-0.005	
					-(0.24)	
1{EPS<0}*%QIX					0.044	
					(1.17)	
1 year stock performance	-0.016	***	-0.015	***	-0.015	***
	-(5.33)		-(5.27)		-(5.28)	
ROA	-0.02		-0.02		-0.02	
	-(0.77)		-(0.75)		-(0.77)	
idiosyncratic risk	-0.004		-0.003		0.001	
	-(0.07)		-(0.05)		(0.02)	
Size:ln(Total Assets)	0.013	***	0.014	***	0.014	***
	(2.67)		(2.76)		(2.75)	
1{CEO retirement Age}	-0.023	***	-0.023	***	-0.023	***
	-(3.73)		-(3.72)		-(3.71)	
1{High CEO ownership}	-0.01		-0.01		-0.01	
	-(1.11)		-(1.09)		-(1.08)	
CEO tenure	0.001	**	0.001	**	0.001	**
	(2.25)		(2.23)		(2.22)	
1{Chairman CEO}	-0.012	**	-0.012	**	-0.012	**
	-(2.38)		-(2.36)		-(2.39)	
%independent directors	0.014		0.015		0.016	
	(0.84)		(0.88)		(0.95)	
%ind.dir*1{EPS<0}	0.009		0.007		-0.011	
	(0.23)		(0.17)		-(0.27)	
constant	-0.07	*	-0.075	**	-0.074	*
	-(1.87)		-(1.99)		-(1.94)	

Table 3.3 Panel C.1 Continued

	(1)	(2)	(3)
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
N	10744	10744	10744
R2	0.014	0.014	0.014

Table 3.3 Panel C Continued

Panel C.2 Linear probability model controlling for independent directors												
Dependent Variable: 1{Forced CEO turnover}												
Sample Period:	Decimalization											
Linear probability model	Before						After					
	(4)			(5)			(6)			(7)		
%TRA	-0.074			-0.084		*	-0.104			0.014		
	-(1.27)			-(1.40)			-(1.70)			(0.58)		
1{EPS<0}	-0.033			-0.024			-0.016			-0.004		
	-(0.59)			-(0.40)			-(0.24)			-(0.10)		
1{EPS<0}*%TRA	-0.002			-0.025			-0.023			0.134	**	
	-(0.01)			-(0.14)			-(0.13)			(2.45)		
%DED				-0.037			-0.085					
				-(0.73)			-(1.41)					
1{EPS<0}*%DED				-0.049			-0.046					
				-(0.40)			-(0.35)					
%QIX							-0.084					
							-(1.45)					
1{EPS<0}*%QIX							-0.022					
							-(0.17)					
1 year stock performance	-0.019	***		-0.019	***	**	-0.017			-0.014	***	
	-(2.83)			-(2.72)			-(2.48)			-(3.71)		
ROA	-0.05			-0.05			-0.04			-0.045		
	-(0.69)			-(0.70)			-(0.56)			-(1.37)		
idiosyncratic risk	0.027			0.022			-0.002			-0.057		
	(0.12)			(0.10)			-(0.01)			-(0.92)		
Size:ln(Total Assets)	0.023			0.023			0.027			0		
	(1.40)			(1.37)			(1.57)			(0.07)		
1{CEO retirement Age}	-0.036	**		-0.036	**		-0.036	**		-0.025	***	
	-(2.35)			-(2.35)			-(2.37)			-(3.48)		

(8)			(9)			
0.013			0.021			
(0.52)			(0.75)			
0.006			-0.03			
(0.15)			-(0.68)			
0.136	**		0.2	***		
(2.47)			(3.22)			
0.03			0.036			
(0.82)			(0.94)			
-0.14	*		-0.066			
-(1.73)			-(0.76)			
			0.023			
			(1.01)			
			0.1	**		
			(2.24)			
-0.013	***		-0.013	***		
-(3.63)			-(3.61)			
-0.042			-0.041			
-(1.30)			-(1.27)			
-0.055			-0.036			
-(0.88)			-(0.56)			
0.001			0.001			
(0.21)			(0.16)			
-0.025	***		-0.025	***		
-(3.45)			-(3.44)			

Table 3.3 Panel C.2 Continued

	(1)		(2)		(3)		(4)		(5)		(6)	
1{High CEO ownership}	-0.043	*	-0.043	*	-0.043	*	0.003		0.003		0.003	
	-(1.81)		-(1.82)		-(1.81)		(0.23)		(0.24)		(0.30)	
CEO tenure	0		0		0		0.002	***	0.002	***	0.002	***
	(0.18)		(0.15)		(0.14)		(4.36)		(4.30)		(4.32)	
1{Chairman CEO}	-0.022	*	-0.022	*	-0.022	*	-0.011	*	-0.011	*	-0.011	*
	-(1.77)		-(1.79)		-(1.75)		-(1.88)		-(1.80)		-(1.81)	
%independent directors	-0.026		-0.025		-0.022		0.048	**	0.049	**	0.052	**
	-(0.59)		-(0.55)		-(0.50)		(2.20)		(2.28)		(2.37)	
%ind.dir*1{EPS<0}	0.1		0.099		0.093		-0.01		-0.01		-0.046	
	(1.14)		(1.12)		(1.05)		-(0.18)		-(0.19)		-(0.84)	
constant	-0.087		-0.077		-0.071		-0.028		-0.038		-0.055	
	-(0.69)		-(0.61)		-(0.55)		-(0.49)		-(0.67)		-(0.95)	
Firm FE	Yes		Yes		Yes		Yes		Yes		Yes	
Year FE	Yes		Yes		Yes		Yes		Yes		Yes	
N	3193		3193		3193		7551		7551		7551	
R2	0.025		0.026		0.027		0.013		0.014		0.015	

Table 3.4
Likelihood of forced turnover and liquidity shock using Logit

Total sample consists of 15,089 firm-years in Panel A and 3,202 firm-years in Panel B. The dependent variable is forced CEO turnover, defined as one if there is a forced turnover and zero otherwise. Forced turnover classification follows Parrino (1997) as described in Appendix II.A Section B. Please see Appendix II.A Section A Variable Definition section for detailed definition of the variables used. Columns (1) – (3) uses all the data in the sample, while columns (4) – (6) uses data before the decimalization period and (7) – (9) uses data after the decimalization period. In Panel A, Logit regressions are performed with industry and year dummies included in all specifications. Panel A.1 runs regression with all data while Panel A.2 reports regressions where data is divided before and after decimalization. In Panel B, Logit regressions are performed with firm fixed effect and year dummies are included in all specifications. Panel B.1 reports regressions with all data while Panel B.2 reports regressions where data is divided before and after decimalization. Panel C is same as Panel B, except that fraction of independent directors and its interaction with negative EPS dummy are included as control variables. *, **, and *** indicate the significance at the 10%, 5%, and 1% level, respectively. T-statistics are reported under the coefficients in parentheses. Standard errors are clustered at the firm level.

Table 3.4 Continued

Panel A.1 Logit model with industry and year fixed effects						
Dependent Variable:1{Forced CEO turnover}						
Sample Period:	All					
Logit model						
	(1)		(2)		(3)	
%TRA	-0.841		-0.835		-0.935	
	-(1.33)		-(1.32)		-(1.50)	
1{EPS<0}	-0.006		0.06		-0.549	
	-(0.02)		(0.20)		-(1.27)	
1{EPS<0}*%TRA	3.21	***	3.176	***	3.243	***
	(2.85)		(2.81)		(2.78)	
%DED			0.411		0.121	
			(0.49)		(0.14)	
1{EPS<0}*%DED			-0.704		0.073	
			-(0.49)		(0.05)	
%QIX					-0.288	
					-(0.60)	
1{EPS<0}*%QIX					1.434	**
					(2.16)	
1year stock performance	-1.311	***	-1.307	***	-1.301	***
	-(6.86)		-(6.84)		-(6.86)	
ROA	-0.057		-0.046		-0.23	
	-(0.13)		-(0.11)		-(0.54)	
idiosyncratic risk	-0.248		-0.228		-0.013	
	-(0.22)		-(0.20)		-(0.01)	
Size:ln(Total Assets)	0.009		0.009		0.006	
	(0.20)		(0.20)		(0.12)	
1{CEO retirement Age}	-0.895	***	-0.896	***	-0.895	***
	-(2.75)		-(2.76)		-(2.76)	
1{High CEO ownership}	-0.476	**	-0.472	**	-0.479	**
	-(2.02)		-(2.00)		-(2.04)	
CEO Tenure	-0.051	***	-0.051	***	-0.052	***
	-(4.88)		-(4.87)		-(4.98)	
1{Chairman CEO}	-0.334	***	-0.335	***	-0.321	**
	-(2.69)		-(2.70)		-(2.56)	
constant	-2.616	***	-2.675	***	-2.495	***
	-(3.53)		-(3.53)		-(3.08)	
Industry FE	Yes		Yes		Yes	
Year FE	Yes		Yes		Yes	
N	15089		15089		15089	
PseudoR2	0.097		0.097		0.098	

Table 3.4 Panel A Continued

Panel A.2 Logit model with industry and year fixed effects												
Dependent Variable:1{Forced CEO turnover}												
Sample Period:	Decimalization											
Logit model	Before						After					
	(4)		(5)		(6)		(7)		(8)		(9)	
%TRA	-3.025	**	-3.065	**	-3.415	***	-0.074		-0.121		-0.554	
	-(2.49)		-(2.51)		-(2.72)		-(0.09)		-(0.15)		-(0.69)	
1{EPS<0}	-0.13		-0.468		-0.083		0.023		0.214		-1.128	
	-(0.26)		-(0.80)		-(0.12)		(0.06)		(0.55)		-(1.64)	
1{EPS<0}*%TRA	4.039		4.453		5.095	*	2.924	**	3.244	**	4.23	***
	(1.39)		(1.53)		(1.68)		(2.16)		(2.49)		(3.05)	
%DED			-0.69		-0.573				1.893		1.313	
			-(0.59)		-(0.49)				(1.58)		(0.99)	
1{EPS<0}*%DED			2.326		2.258				-4.44	*	-3.133	
			(1.31)		(1.27)				-(1.71)		-(1.15)	
%QIX					1.222						-0.737	
					(1.30)						-(1.28)	
1{EPS<0}*%QIX					-1.81						2.343	***
					-(0.87)						(2.64)	
1year stock performance	-1.356	***	-1.366	***	-1.364	***	-1.234	***	-1.216	***	-1.218	***
	-(4.82)		-(4.82)		-(4.76)		-(4.93)		-(4.87)		-(4.93)	
ROA	0.359		0.269		0.413		-0.398		-0.339		-0.569	
	(0.41)		(0.30)		(0.43)		-(0.91)		-(0.79)		-(1.33)	
idiosyncratic risk	3.684	*	3.678	*	4.303	**	-1.489		-1.343		-0.894	
	(1.82)		(1.80)		(2.14)		-(1.04)		-(0.93)		-(0.60)	
Size:ln(Total Assets)	0.098		0.095		0.076		-0.032		-0.03		-0.043	
	(1.25)		(1.22)		(0.90)		-(0.55)		-(0.52)		-(0.75)	
1{CEO retirement Age}	-0.808		-0.802		-0.809		-1.022	**	-1.017	**	-1.011	**
	-(1.56)		-(1.55)		-(1.57)		-(2.41)		-(2.40)		-(2.40)	
1{High CEO ownership}	-1.544	***	-1.537	***	-1.5	***	0.001		0.007		-0.03	
	-(2.92)		-(2.90)		-(2.82)		(0.00)		(0.03)		-(0.11)	

Table 3.4 Panel A.2 Continued

	(4)		(5)		(6)		(7)		(8)		(9)	
CEO Tenure	-0.066	***	-0.067	***	-0.066	***	-0.047	***	-0.047	***	-0.048	***
	-(3.50)		-(3.55)		-(3.51)		-(3.73)		-(3.71)		-(3.83)	
1{Chairman CEO}	-0.062		-0.049		-0.087		-0.493	***	-0.497	***	-0.476	***
	-(0.28)		-(0.22)		-(0.39)		-(3.18)		-(3.18)		-(3.03)	
constant	-3.399	***	-3.263	**	-3.496	***	-2.353	**	-2.563	**	-2.112	**
	-(2.63)		-(2.41)		-(2.70)		-(2.32)		-(2.55)		-(1.97)	
Industry FE	Yes		Yes		Yes		Yes		Yes		Yes	
Year FE	Yes		Yes		Yes		Yes		Yes		Yes	
N	5646		5646		5646		8867		8867		8867	
PseudoR2	0.136		0.137		0.139		0.097		0.099		0.103	

Table 3.4 Continued

Panel B.1 Logit model with firm and year fixed effects						
Dependent Variable:1{Forced CEO turnover}						
Sample Period:	All					
Logit model						
	(1)		(2)		(3)	
%TRA	-1		-0.924		-0.771	
	-(1.10)		-(1.01)		-(0.82)	
1{EPS<0}	-0.513		-0.382		-1.113	**
	-(1.58)		-(1.08)		-(2.12)	
1{EPS<0}*%TRA	4.931	***	4.946	***	5.223	***
	(3.59)		(3.59)		(3.74)	
%DED			1.507		1.689	
			(1.49)		(1.59)	
1{EPS<0}*%DED			-1.692		-0.95	
			-(0.95)		-(0.52)	
%QIX					0.68	
					(0.98)	
1{EPS<0}*%QIX					1.815	**
					(2.06)	
1year stock performance	-1.202	***	-1.206	***	-1.202	***
	-(6.76)		-(6.77)		-(6.73)	
ROA	0.24		0.28		0.339	
	(0.31)		(0.36)		(0.43)	
idiosyncratic risk	-2.385		-2.195		-1.644	
	-(1.23)		-(1.13)		-(0.84)	
Size:ln(Total Assets)	0.554	***	0.584	***	0.554	***
	(3.20)		(3.34)		(3.10)	
1{CEO retirement Age}	-1.33	***	-1.341	***	-1.344	***
	-(3.57)		-(3.59)		-(3.58)	
1{High CEO ownership}	-0.653	**	-0.644	**	-0.655	**
	-(2.00)		-(1.97)		-(1.98)	
CEO Tenure	0.041	***	0.042	***	0.042	***
	(2.80)		(2.85)		(2.82)	
1{Chairman CEO}	-0.356	**	-0.358	**	-0.366	**
	-(2.16)		-(2.17)		-(2.22)	
Firm FE	Yes		Yes		Yes	
Year FE	Yes		Yes		Yes	
N	3202		3202		3202	
PseudoR2	0.121		0.123		0.127	

Table 3.4 Panel B Continued

Panel B.2 Logit model with firm and year fixed effects												
Dependent Variable:1{Forced CEO turnover}												
Sample Period:	Decimalization											
Logit model	Before						After					
	(4)		(5)		(6)		(7)		(8)		(9)	
%TRA	-5.772	***	-5.947	***	-6.152	***	0.403		0.237		0.532	
	-(2.71)		-(2.73)		-(2.78)		(0.34)		(0.20)		(0.42)	
1{EPS<0}	-0.708		-1.001		-0.564		-0.717		-0.465		-1.617	*
	-(1.49)		-(1.64)		-(0.67)		-(1.50)		-(0.95)		-(1.84)	
1{EPS<0}*%TRA	6.177	*	6.793	*	7.136	*	5.39	***	6.419	***	7.298	***
	(1.79)		(1.88)		(1.94)		(3.08)		(3.49)		(3.68)	
%DED			-1.253		-1.363				3.221	**	3.641	**
			-(0.80)		-(0.78)				(2.02)		(2.25)	
1{EPS<0}*%DED			2.061		2.202				-7.782	**	-6.196	*
			(0.79)		(0.83)				-(2.17)		-(1.69)	
%QIX					-0.053						1.206	
					-(0.03)						(1.37)	
1{EPS<0}*%QIX					-2.058						2.149	*
					-(0.77)						(1.74)	
1year stock performance	-1.094	***	-1.101	***	-1.116	***	-1.134	***	-1.156	***	-1.125	***
	-(3.64)		-(3.66)		-(3.66)		-(4.77)		-(4.82)		-(4.67)	
ROA	-0.541		-0.568		-0.405		-0.19		0.251		0.335	
	-(0.35)		-(0.37)		-(0.26)		-(0.16)		(0.21)		(0.27)	
idiosyncratic risk	-0.159		-0.019		-0.622		-5.518	**	-5.267	**	-4.668	*
	-(0.03)		(0.00)		-(0.12)		-(2.20)		-(2.09)		-(1.82)	
Size:ln(Total Assets)	1.365	***	1.327	***	1.348	***	0.005		0.075		0.001	
	(3.18)		(3.07)		(3.09)		(0.02)		(0.30)		(0.01)	
1{CEO retirement Age}	-1.59	**	-1.617	**	-1.643	**	-1.463	***	-1.51	***	-1.536	***
	-(2.06)		-(2.09)		-(2.11)		-(3.00)		-(3.08)		-(3.08)	
1{High CEO ownership}	-1.408	*	-1.43	*	-1.425	*	-0.678		-0.674		-0.651	
	-(1.78)		-(1.80)		-(1.79)		-(1.47)		-(1.46)		-(1.40)	

Table 3.4 Panel B.2 Continued

	(4)		(5)		(6)		(7)		(8)		(9)	
CEO Tenure	0.057	**	0.057	**	0.058	**	0.136	***	0.137	***	0.135	***
	(2.19)		(2.20)		(2.24)		(4.99)		(5.01)		(4.90)	
1{Chairman CEO}	-0.44		-0.448		-0.466		-0.467	**	-0.473	**	-0.454	**
	-(1.43)		-(1.45)		-(1.50)		-(2.06)		-(2.07)		-(1.99)	
Firm FE	Yes		Yes		Yes		Yes		Yes		Yes	
Year FE	Yes		Yes		Yes		Yes		Yes		Yes	
N	754		754		754		1445		1445		1445	
PseudoR2	0.194		0.196		0.197		0.136		0.144		0.153	

Table 3.4 Continued

Panel C.1 Logit model controlling for independent directors						
Dependent Variable: 1{Forced CEO turnover}						
Sample Period:	All					
	(1)		(2)		(3)	
%TRA	-0.502		-0.497		-0.496	
	-(0.42)		-(0.41)		-(0.38)	
1{EPS<0}	-0.084		0.174		0.013	
	-(0.07)		(0.15)		(0.01)	
1{EPS<0}*%TRA	4.223	**	4.219	**	4.665	**
	(2.31)		(2.30)		(2.46)	
%DED			0.911		0.901	
			(0.70)		(0.65)	
1{EPS<0}*%DED			-2.013		-1.41	
			-(0.80)		-(0.54)	
%QIX					0.125	
					(0.13)	
1{EPS<0}*%QIX					1.391	
					(1.03)	
1 year stock performance	-1.129	***	-1.127	***	-1.131	***
	-(5.18)		-(5.15)		-(5.17)	
ROA	-0.496		-0.396		-0.206	
	-(0.47)		-(0.37)		-(0.19)	
idiosyncratic risk	-0.308		-0.169		0.012	
	-(0.12)		-(0.06)		(0.00)	
Size:ln(Total Assets)	0.651	**	0.672	**	0.657	**
	(2.47)		(2.54)		(2.48)	
1{CEO retirement Age}	-1.748	***	-1.748	***	-1.737	***
	-(3.61)		-(3.61)		-(3.58)	
1{High CEO ownership}	-0.715	*	-0.693	*	-0.686	
	-(1.71)		-(1.65)		-(1.64)	
CEO tenure	0.045	**	0.046	**	0.045	**
	(2.51)		(2.53)		(2.47)	
1{Chairman CEO}	-0.426	**	-0.425	**	-0.431	**
	-(2.07)		-(2.06)		-(2.09)	
%independent directors	0.413		0.423		0.49	
	(0.48)		(0.49)		(0.57)	
%ind.dir*1{EPS<0}	0.063		-0.072		-0.716	
	(0.04)		-(0.05)		-(0.44)	
Firm FE	Yes		Yes		Yes	
Year FE	Yes		Yes		Yes	
N	1868		1868		1868	
Adj.R2	0.137		0.138		0.139	

Table 3.4 Panel C Continued

Panel C.2 Logit model controlling for independent directors												
Dependent Variable: 1{Forced CEO turnover}												
Sample Period:	Decimalization											
Logit model	Before						After					
	(4)		(5)		(6)		(7)		(8)		(9)	
%TRA	-1.729		-2.062		-2.067		0.913		0.804		0.895	
	-(0.48)		-(0.55)		-(0.53)		(0.59)		(0.51)		(0.52)	
1{EPS<0}	-0.427		-0.879		-0.98		1.627		2.706		2.136	
	-(0.20)		-(0.38)		-(0.41)		(0.85)		(1.37)		(1.02)	
1{EPS<0}*%TRA	4.666		6.085		5.933		4.741	**	5.512	**	6.605	**
	(0.79)		(0.95)		(0.93)		(1.97)		(2.20)		(2.33)	
%DED			-1.226		-1.55				2.876		3.093	
			-(0.61)		-(0.59)				(1.43)		(1.48)	
1{EPS<0}*%DED			2.807		2.782				-8.676	*	-6.964	
			(0.64)		(0.62)				-(1.87)		-(1.40)	
%QIX					-0.661						0.41	
					-(0.22)						(0.34)	
1{EPS<0}*%QIX					2.06						2.016	
					(0.38)						(0.98)	
1 year stock performance	-1.414	***	-1.451	***	-1.441	***	-1.106	***	-1.141	***	-1.131	***
	-(3.05)		-(3.11)		-(3.01)		-(3.87)		-(3.88)		-(3.83)	
ROA	0.634		0.765		0.952		-0.586		-0.018		0.053	
	(0.27)		(0.32)		(0.38)		-(0.39)		-(0.01)		(0.03)	
idiosyncratic risk	-5.474		-4.869		-4.371		-1.357		-0.5		-0.308	
	-(0.57)		-(0.50)		-(0.44)		-(0.39)		-(0.14)		-(0.09)	
Size:ln(Total Assets)	2.772	***	2.711	***	2.755	***	0.176		0.261		0.233	
	(2.74)		(2.64)		(2.64)		(0.47)		(0.70)		(0.62)	
1{CEO retirement Age}	-1.472		-1.488		-1.471		-2.291	***	-2.38	***	-2.377	***
	-(1.58)		-(1.58)		-(1.57)		-(3.31)		-(3.39)		-(3.38)	

Table 3.4 Panel C.2 Continued

	(4)		(5)		(6)		(7)		(8)		(9)	
1{High CEO ownership}	-2.537	**	-2.607	**	-2.575	**	-0.469		-0.501		-0.449	
	-(2.14)		-(2.19)		-(2.16)		-(0.78)		-(0.83)		-(0.74)	
CEO tenure	0.066	*	0.067	*	0.068	*	0.158	***	0.16	***	0.156	***
	(1.71)		(1.73)		(1.71)		(4.64)		(4.72)		(4.60)	
1{Chairman CEO}	-1.205	**	-1.171	**	-1.151	**	-0.475	*	-0.485	*	-0.485	*
	-(2.38)		-(2.28)		-(2.23)		-(1.67)		-(1.69)		-(1.69)	
%independent directors	-1.745		-1.635		-1.585		2.808	**	3.04	**	3.146	**
	-(0.87)		-(0.81)		-(0.78)		(2.13)		(2.29)		(2.36)	
%ind.dir*1{EPS<0}	1.518		1.542		1.036		-2.479		-3.32		-4.221	*
	(0.47)		(0.47)		(0.29)		-(1.07)		-(1.41)		-(1.70)	
Firm FE	Yes		Yes		Yes		Yes		Yes		Yes	
Year FE	Yes		Yes		Yes		Yes		Yes		Yes	
N	308		308		308		982		982		982	
Adj.R2	0.295		0.298		0.298		0.162		0.17		0.173	

Table 3.5
Likelihood of forced turnover and firm's liquidity
using Amihud (2002) illiquidity measure

Total sample consists of 3,818 firm-years of sample period 1993-2009. The dependent variable is forced CEO turnover, defined as one if there is a forced turnover and zero otherwise. Forced turnover classification follows Parrino (1997) as described in Appendix II.A Section B. Please see Appendix II.A Section A Variable Definition section for detailed definition of the variables used. Columns are separated using different firm data based on Amihud (2002)'s illiquidity measure. 1st quartile implies the lowest liquid firms and 4th quartile firms are the ones with the highest liquid firms. Columns (1) uses data that belong to the lowest liquid firms (0~25th percentile), (2) uses firms in the third quartile (50~75th percentile), (3) uses firms in second quartile (25~50th percentile), and (4) uses the most liquid firms' data (75~100th percentile). Regressions are performed with firm fixed effect and year dummies are included in all specifications. *, **, and *** indicate the significance at the 10%, 5%, and 1% level, respectively. T-statistics are reported under the coefficients in parentheses. Standard errors are clustered at the firm level.

Table 3.5 Continued

Panel A. using Amihud (2002) illiquidity measure

Dependent variable: 1{Forced CEO Turnover}				
Sample:	least liquid	3rd quartile	2nd quartile	most liquid
	(1)	(2)	(3)	(4)
%TRA	-0.032	0.036	-0.028	-0.039
	-(0.74)	(0.85)	-(0.75)	-(0.89)
1{EPS<0}	-0.003	0.004	-0.028	-0.055 *
	-(0.20)	(0.13)	-(1.07)	-(1.76)
1{EPS<0}*%TRA	0.079	-0.016	0.376 ***	0.181 *
	(1.08)	-(0.17)	(4.02)	(1.71)
%DED	0.058	0.033	-0.035	-0.005
	(1.14)	(0.66)	-(0.82)	-(0.10)
1{EPS<0}*%DED	0.048	-0.052	-0.187 *	0.161
	(0.53)	-(0.47)	-(1.90)	(1.03)
1 year stock performance	-0.005	-0.02 ***	-0.01 *	-0.019 ***
	-(1.51)	-(3.70)	-(1.89)	-(3.24)
ROA	0.026	-0.069	-0.033	-0.028
	(0.84)	-(1.23)	-(0.65)	-(0.57)
idiosyncratic risk	-0.111	-0.026	-0.05	0.214 *
	-(1.34)	-(0.24)	-(0.51)	(1.88)
Size:ln(Total Assets)	0.015 *	0.002	0.003	0.019 **
	(1.65)	(0.18)	(0.38)	(2.38)
1{CEO retirement Age}	-0.012	-0.031 **	-0.014	-0.015
	-(1.02)	-(2.43)	-(1.33)	-(1.41)
1{High CEO ownership}	-0.021 *	-0.002	-0.036 **	0.034
	-(1.76)	-(0.15)	-(2.42)	(1.56)
CEO tenure	0.001	0.001 *	0.001	0
	(1.36)	(1.76)	(1.58)	-(0.43)
1{Chairman CEO}	-0.007	-0.004	-0.004	-0.004
	-(0.81)	-(0.44)	-(0.51)	-(0.46)
constant	-0.078	-0.011	0	-0.125 *
	-(1.48)	-(0.15)	-(0.01)	-(1.78)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	3818	3818	3818	3818
Adj.R2	0.015	0.021	0.025	0.02

Table 3.5 Continued

Panel B. Controlling for independent director's effect				
Dependent variable: 1{Forced CEO Turnover}				
Sample period:	least liquid	3rd quartile	2nd quartile	most liquid
	(1)	(2)	(3)	(4)
%TRA	-0.117**	0.102*	-0.016	-0.025
	-(2.06)	(1.95)	-(0.35)	-(0.48)
1{EPS<0}	0.008	0.011	-0.025	-0.005
	(0.16)	(0.15)	-(0.35)	-(0.06)
1{EPS<0}*%TRA	0.029	-0.166	0.341***	0.305**
	(0.29)	-(1.43)	(2.75)	(2.17)
%DED	0.007	0.115*	-0.087	-0.02
	(0.10)	(1.94)	-(1.59)	-(0.30)
1{EPS<0}*%DED	0.244**	-0.398***	-0.309**	-0.012
	(2.00)	-(2.72)	-(2.18)	-(0.06)
1 year stock performance	-0.013**	-0.026***	-0.014**	-0.022***
	-(1.98)	-(3.66)	-(2.07)	-(3.24)
ROA	0.127*	-0.085	-0.07	0.013
	(1.94)	-(1.16)	-(1.15)	(0.21)
idiosyncratic risk	-0.246*	0.118	-0.002	0.363**
	-(1.92)	(0.85)	-(0.01)	(2.48)
Size:ln(Total Assets)	0.008	0.006	-0.003	0.022**
	(0.50)	(0.38)	-(0.26)	(1.96)
1{CEO retirement Age}	-0.018	-0.046***	-0.03**	-0.016
	-(1.19)	-(3.28)	-(2.22)	-(1.16)
1{High CEO ownership}	-0.015	-0.005	-0.02	0.028
	-(0.87)	-(0.23)	-(0.95)	(0.90)
CEO tenure	0.001	0.001	0.001	-0.001
	(1.40)	(1.07)	(1.58)	-(0.57)
1{Chairman CEO}	-0.016	-0.001	0.002	-0.016
	-(1.38)	-(0.05)	(0.18)	-(1.32)
%independent directors	-0.006	0.032	0.016	0.03
	-(0.15)	(0.81)	(0.42)	(0.78)
1{EPS<0}*%ind.dir	0.001	0.091	0.012	-0.095
	(0.02)	(0.90)	(0.13)	-(0.91)
constant	-0.006	-0.066	0.071	-0.213*
	-(0.06)	-(0.63)	(0.76)	-(1.90)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	2686	2686	2686	2686
Adj.R2	0.024	0.041	0.025	0.026

Table 3.6
Likelihood of forced turnover and firm's liquidity using Relative spread by Amihud and Mendelson (1986)

Total sample consists of 12,703 firm-years of sample period 1993-2007. The dependent variable is forced CEO turnover, defined as one if there is a forced turnover and zero otherwise. Forced turnover classification follows Parrino (1997) as described in Appendix II.A Section B. Please see Appendix II.A Section A Variable Definition section for detailed definition of the variables used. Columns are separated using different firm data based on Relative spread measure. "High" columns indicate illiquid stocks whereas "low" columns indicate more liquid stocks based on sample median split. Year dummies are included in all specifications. *, **, and *** indicate the significance at the 10%, 5%, and 1% level, respectively. T-statistics are reported under the coefficients in parentheses. Standard errors are clustered at the firm level.

Panel A. dividing the sample by relative spread

Dependent Variable: 1{Forced CEO turnover}								
Sample:	(1) high	(2) high	(3) low	(4) low	(5) high	(6) high	(7) low	(8) low
%TRA	-0.044	-0.04	-0.041	-0.043	-0.007	-0.007	-0.027	-0.027
	-(1.41)	-(1.26)	-(1.42)	-(1.51)	-(0.32)	-(0.31)	-(1.29)	-(1.30)
1{EPS<0}	-0.008	-0.006	-0.026	-0.011	0.007	0.006	-0.005	0.004
	-(0.57)	-(0.40)	-(1.45)	-(0.58)	(0.70)	(0.53)	-(0.35)	(0.29)
1{EPS<0}*%TRA	0.095	0.095	0.194***	0.196***	0.074	0.074	0.166***	0.171***
	(1.48)	(1.47)	(3.03)	(3.07)	(1.42)	(1.41)	(3.07)	(3.15)
%DED		0.034		-0.021		0.008		0.017
		(0.96)		-(0.58)		(0.30)		(0.65)
1{EPS<0}*%DED		-0.01		-0.196**		0.008		-0.133+
		-(0.14)		-(2.06)		(0.14)		-(1.63)
1 year stock performance	-0.011***	-0.011***	-0.011***	-0.01***	-0.016***	-0.016***	-0.013***	-0.013***
	-(3.06)	-(3.07)	-(3.36)	-(3.31)	-(5.29)	-(5.29)	-(4.59)	-(4.53)
ROA	-0.003	-0.001	-0.038	-0.039	-0.008	-0.008	0.007	0.008
	-(0.10)	-(0.05)	-(1.04)	-(1.07)	-(0.44)	-(0.45)	(0.35)	(0.40)

Table 3.6 Panel A Continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
idiosyncratic risk	-0.134*	-0.131	-0.01	-0.008	0.019	0.021	0.044	0.045
	-(1.66)	-(1.62)	-(0.13)	-(0.11)	(0.40)	(0.43)	(0.98)	(1.00)
Size:ln(Total Assets)	0.013*	0.013*	0.012*	0.012*	0	0	0.002	0.002
	(1.83)	(1.81)	(1.92)	(1.94)	-(0.14)	-(0.20)	(1.00)	(1.06)
1{CEO retirement Age}	-0.021**	-0.022**	-0.014	-0.014	-0.017**	-0.017**	-0.005	-0.005
	-(2.39)	-(2.40)	-(1.60)	-(1.63)	-(2.46)	-(2.46)	-(0.69)	-(0.72)
1{High CEO ownership}	-0.034***	-0.034***	-0.001	-0.001	-0.017***	-0.017**	-0.002	-0.002
	-(3.05)	-(3.04)	-(0.07)	-(0.11)	-(2.61)	-(2.57)	-(0.33)	-(0.34)
CEO Tenure	0.001***	0.001***	0.001	0.001	-0.001**	-0.001**	-0.001***	-0.001***
	(2.71)	(2.73)	(1.39)	(1.34)	-(2.14)	-(2.14)	-(3.19)	-(3.13)
1{Chairman CEO}	-0.002	-0.002	-0.012**	-0.012**	-0.004	-0.005	-0.01**	-0.01**
	-(0.27)	-(0.29)	-(2.07)	-(2.02)	-(0.96)	-(0.97)	-(2.30)	-(2.30)
constant	0.004	-0.002	-0.06	-0.059	0.058	0.057	0.004	0.001
	(0.08)	-(0.03)	-(0.95)	-(0.92)	(1.55)	(1.51)	(0.09)	(0.03)
Firm FE	Yes	Yes	Yes	Yes	No	No	No	No
Industry FE	No	No	No	No	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	6352	6352	6351	6351	6352	6352	6351	6351
R2	0.016	0.016	0.012	0.013	0.025	0.025	0.023	0.024

Table 3.6 Continued

Panel B. Controlling for independent directors' effect								
Dependent Variable: 1{Forced CEO turnover}								
Sample:	(1) high	(2) high	(3) low	(4) low	(5) high	(6) high	(7) low	(8) low
%TRA	0.001	0.005	-0.052	-0.056	0.006	0.004	-0.039	-0.039
	(0.03)	(0.12)	-(1.49)	-(1.61)	(0.20)	(0.12)	-(1.55)	-(1.58)
1{EPS<0}	-0.052	-0.061	0.007	0.027	-0.028	-0.03	-0.019	-0.004
	-(1.15)	-(1.30)	(0.15)	(0.57)	-(0.87)	-(0.92)	-(0.53)	-(0.10)
1{EPS<0}*%TRA	-0.028	-0.015	0.194**	0.187**	-0.069	-0.069	0.17***	0.171***
	-(0.31)	-(0.17)	(2.47)	(2.39)	-(0.98)	-(0.97)	(2.64)	(2.66)
%DED		0.013		-0.015		-0.028		0.024
		(0.28)		-(0.34)		-(0.87)		(0.76)
1{EPS<0}*%DED		0.086		-0.283**		0.01		-0.188*
		(0.87)		-(2.50)		(0.13)		-(1.95)
1 year stock performance	-0.025***	-0.025***	-0.012***	-0.012***	-0.027***	-0.027***	-0.014***	-0.014***
	-(3.80)	-(3.84)	-(2.87)	-(2.79)	-(5.14)	-(5.15)	-(4.04)	-(3.94)
ROA	-0.032	-0.032	-0.016	-0.021	-0.05*	-0.05*	0.022	0.022
	-(0.58)	-(0.58)	-(0.36)	-(0.47)	-(1.66)	-(1.65)	(0.87)	(0.89)
idiosyncratic risk	-0.219*	-0.215*	0.055	0.064	0.084	0.082	0.109**	0.111**
	-(1.75)	-(1.71)	(0.60)	(0.70)	(1.16)	(1.13)	(1.96)	(1.99)
Size:ln(Total Assets)	-0.003	-0.004	0.019**	0.02**	-0.001	-0.001	0.003*	0.003*
	-(0.28)	-(0.36)	(2.44)	(2.46)	-(0.66)	-(0.58)	(1.71)	(1.74)
1{CEO retirement Age}	-0.026**	-0.026**	-0.021**	-0.021**	-0.019**	-0.019**	-0.006	-0.006
	-(2.39)	-(2.39)	-(2.01)	-(1.99)	-(2.24)	-(2.23)	-(0.79)	-(0.80)
1{High CEO ownership}	-0.075***	-0.075***	0.021	0.02	-0.018**	-0.019**	0.004	0.004
	-(4.14)	-(4.15)	(1.38)	(1.34)	-(2.14)	-(2.20)	(0.58)	(0.55)
CEO Tenure	0.003***	0.003***	0	0	0	0	-0.001***	-0.001***
	(4.23)	(4.27)	(0.28)	(0.23)	-(1.10)	-(1.10)	-(2.90)	-(2.83)
1{Chairman CEO}	-0.008	-0.008	-0.013	-0.012	-0.014**	-0.014**	-0.014**	-0.014**
	-(0.87)	-(0.88)	-(1.56)	-(1.47)	-(2.25)	-(2.19)	-(2.54)	-(2.57)

Table 3.6 Panel B Continued

Sample:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
%independent directors	-0.016	-0.016	0.04	0.042	0.03*	0.03*	0.028*	0.029*
	-(0.48)	-(0.50)	(1.50)	(1.57)	(1.69)	(1.70)	(1.84)	(1.87)
%ind dir*1{EPS<0}	0.097	0.092	-0.007	0	0.082*	0.084*	0.023	0.023
	(1.44)	(1.35)	-(0.11)	(0.00)	(1.70)	(1.74)	(0.44)	(0.44)
constant	0.077	0.08	-0.149**	-0.148**	0.059	0.059	-0.017	-0.02
	(0.91)	(0.93)	-(2.16)	-(2.13)	(1.40)	(1.38)	-(0.69)	-(0.78)
Firm FE	Yes	Yes	Yes	Yes	No	No	No	No
Industry FE	No	No	No	No	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	4171	4171	4853	4853	4171	4171	4853	4853
R2	0.023	0.023	0.019	0.021	0.033	0.033	0.031	0.032

Table 3.7
Event Study of forced CEO turnover

We use the Fama-French 4 factor (market, size, book to market, and momentum) model as the asset pricing model to generate the expected daily return. We set [-150,-31] trading days relative to the first announcement date of a CEO turnover as the estimation window. To determine the cleanest investor response to a CEO dismissal, we remove CEO turnover that were confounded by major corporate events that were captured by our exhaustive database list. We start with 728 forced CEO turnover from 1993 to 2009. The contaminating events are mergers and acquisitions (SDC Platinum), earnings announcements (IBES), restatements (GAO augmented by the data used in Meschke and Kim (2011)), and class action lawsuits (Stanford Lawsuit Clearing House database). For CEO dismissal announcements confounded by earnings announcements and merger announcements, we remove the observations if the merger or earnings announcements took place 15 calendar days before or after the CEO turnover announcement date. We follow stricter rules in removing CEO dismissals that are potentially associated with accounting restatements or class action lawsuits. If these groups of contaminating events took place two years before or after the CEO dismissal, we remove the CEO turnover observations. Using this procedure, we are left with 373 forced CEO turnover observations. The following tables show the average cumulative abnormal return (ACAR) from -10 trading day to each trading day relative to the announcement. For instance, the eleventh row, with the last trading day being 0, shows ACAR[-10,0]. The twelfth row, with the last trading day being +1, shows ACAR[-10,1]. t(Patell) is the t-statistics in Patell (1975) where cross-sectional independence is assumed. T(BMP) is the t-statistics in Boehmer, Musumeci, and Pouslen (1991) which is robust to event induced volatility changes. For graphical illustration, see Figure 3.5.

Table 3.7 Continued

Last Trading	Before Decimalization				After Decimalization			
Day (t)	ACAR[-10,t]	t(Patell)	t(BMP)	N	ACAR[-10,t]	t(Patell)	t(BMP)	N
-10	0.34%	1.56	0.97	312	0.12%	0.17	0.13	392
-9	0.02%	(0.06)	(0.04)	312	-0.06%	(0.39)	(0.29)	392
-8	-0.19%	(0.55)	(0.38)	312	-0.11%	(0.54)	(0.42)	392
-7	-0.52%	(0.87)	(0.57)	312	-0.76%	(2.64)	(2.18)	392
-6	-0.64%	(1.18)	(0.80)	312	-0.63%	(2.44)	(2.14)	392
-5	-0.99%	(2.03)	(1.40)	312	-0.61%	(2.02)	(1.76)	392
-4	-0.42%	(1.04)	(0.73)	312	-0.61%	(1.60)	(1.31)	392
-3	0.20%	(0.50)	(0.35)	312	-0.73%	(1.91)	(1.55)	392
-2	-0.01%	(0.66)	(0.47)	312	-0.99%	(2.36)	(1.86)	392
-1	0.35%	(0.36)	(0.26)	312	-0.84%	(2.01)	(1.60)	392
0	0.88%	0.64	0.40	312	-1.62%	(3.72)	(2.75)	392
1	0.40%	0.32	0.20	312	-1.39%	(3.35)	(2.25)	392
2	0.49%	0.48	0.29	312	-1.46%	(3.53)	(2.44)	392
3	0.12%	0.12	0.07	312	-1.64%	(3.88)	(2.65)	392
4	-0.02%	(0.13)	(0.08)	312	-1.58%	(3.83)	(2.59)	392
5	0.23%	0.25	0.15	312	-1.76%	(4.09)	(2.83)	392
6	0.10%	0.09	0.05	312	-1.36%	(3.72)	(2.63)	390
7	0.45%	0.39	0.24	312	-1.46%	(3.83)	(2.76)	390
8	0.47%	0.24	0.15	312	-1.00%	(3.32)	(2.38)	390
9	0.73%	0.47	0.30	312	-0.84%	(3.22)	(2.32)	390
10	0.83%	0.58	0.37	312	-1.05%	(3.25)	(2.37)	390
11	0.98%	0.68	0.43	312	-1.23%	(3.49)	(2.53)	390
12	1.14%	0.82	0.54	312	-1.31%	(3.58)	(2.61)	390
13	0.94%	0.62	0.40	312	-1.25%	(3.68)	(2.59)	390
14	1.17%	0.92	0.61	312	-1.22%	(3.36)	(2.45)	390
15	1.42%	1.06	0.70	312	-0.78%	(3.10)	(2.29)	389
16	1.92%	1.25	0.82	312	-1.11%	(3.43)	(2.53)	389
17	1.47%	1.03	0.67	312	-1.27%	(3.48)	(2.56)	389
18	1.89%	1.50	1.00	312	-1.21%	(3.46)	(2.51)	389
19	2.42%	1.89	1.29	312	-1.36%	(3.44)	(2.52)	389
20	2.92%	2.24	1.54	312	-1.03%	(2.90)	(2.13)	389

Table 3.8.
CAR regression of forced CEO turnover

OLS regression with two dimension clustered standard errors at the firm level and year level using Petersen (2009). The dependent variables are the cumulative abnormal return of CEO dismissals over the specified event window. Confounding events such as mergers and acquisitions, earnings announcements, restatements, and class action lawsuits within -15/+15 day of the announcement day are excluded from the sample. The event study methodology is described in the caption of Table 6. The t-statistics are displayed in parentheses. The *, **, and *** represent statistical significance at the 10, 5, and 1% levels, respectively.

Dependent Variable:	CAR[-1,1]	CAR[-1,0]	CAR[0,1]	CAR[0]	CAR[-1,1]	CAR[-1,0]	CAR[0,1]	CAR[0]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
%TRA	-0.207	-0.234	-0.207	-0.234	-0.226	-0.217	-0.226	-0.217
	-(1.52)	-(0.99)	-(1.52)	-(0.99)	-(1.52)	-(1.00)	-(1.52)	-(1.00)
%DED	0.19*	0.258**	0.19*	0.258**	0.188*	0.255**	0.188*	0.255**
	(1.66)	(2.26)	(1.66)	(2.26)	(1.66)	(2.16)	(1.66)	(2.16)
%QIX	-0.342***	-0.35***	-0.342***	-0.35***	-0.343***	-0.341***	-0.343***	-0.341***
	-(3.32)	-(3.91)	-(3.32)	-(3.91)	-(3.28)	-(3.84)	-(3.28)	-(3.84)
1{EPS<0}	0.155	0.106	0.155	0.106	0.15	0.103	0.15	0.103
	(0.91)	(0.62)	(0.91)	(0.62)	(0.88)	(0.60)	(0.88)	(0.60)
1{AD}	-0.085	-0.121**	-0.085	-0.121**	-0.087	-0.117**	-0.087	-0.117**
	-(1.34)	-(2.43)	-(1.34)	-(2.43)	-(1.36)	-(2.40)	-(1.36)	-(2.40)
1{EPS}*1{AD}	-0.034	-0.063	-0.034	-0.063	-0.027	-0.058	-0.027	-0.058
	-(0.18)	-(0.35)	-(0.18)	-(0.35)	-(0.15)	-(0.33)	-(0.15)	-(0.33)
%TRA*1{EPS<0}	0.054	0.315	0.054	0.315	0.073	0.305	0.073	0.305
	(0.16)	(0.87)	(0.16)	(0.87)	(0.23)	(0.89)	(0.23)	(0.89)
%TRA*1{AD}	0.27	0.257	0.27	0.257	0.285	0.237	0.285	0.237
	(1.55)	(1.00)	(1.55)	(1.00)	(1.53)	(1.00)	(1.53)	(1.00)
%TRA*1{EPS}*1{AD}	-0.791**	-0.774**	-0.791**	-0.774**	-0.81**	-0.77**	-0.81**	-0.77**
	-(2.32)	-(2.09)	-(2.32)	-(2.09)	-(2.44)	-(2.22)	-(2.44)	-(2.22)
%DED*1{EPS<0}	-0.763*	-0.616	-0.763*	-0.616	-0.759*	-0.635	-0.759*	-0.635
	-(1.72)	-(1.52)	-(1.72)	-(1.52)	-(1.71)	-(1.54)	-(1.71)	-(1.54)

Table 3.8 Continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
%DED*1{AD}	-0.378*	-0.363**	-0.378*	-0.363**	-0.371*	-0.357*	-0.371*	-0.357*
	-(1.81)	-(2.00)	-(1.81)	-(2.00)	-(1.74)	-(1.95)	-(1.74)	-(1.95)
%DED*1{EPS<0}*1{AD}	1.752**	1.497**	1.752**	1.497**	1.742**	1.516**	1.742**	1.516**
	(2.42)	(2.33)	(2.42)	(2.33)	(2.40)	(2.31)	(2.40)	(2.31)
%QIX*1{EPS<0}	-0.173	-0.332	-0.173	-0.332	-0.162	-0.3	-0.162	-0.3
	-(0.43)	-(0.79)	-(0.43)	-(0.79)	-(0.40)	-(0.72)	-(0.40)	-(0.72)
%QIX*1{AD}	0.325***	0.364***	0.325***	0.364***	0.327***	0.354***	0.327***	0.354***
	(3.02)	(3.95)	(3.02)	(3.95)	(2.96)	(3.84)	(2.96)	(3.84)
%QIX*1{EPS<0}*1{AD}	0.069	0.316	0.069	0.316	0.057	0.283	0.057	0.283
	(0.17)	(0.75)	(0.17)	(0.75)	(0.14)	(0.67)	(0.14)	(0.67)
1yr Stock Perf.	0.001	0.018	0.001	0.018	0.001	0.022	0.001	0.022
	(0.02)	(0.75)	(0.02)	(0.75)	(0.05)	(0.91)	(0.05)	(0.91)
1{outsider}	0.017	0.022	0.017	0.022	0.017	0.019	0.017	0.019
	(1.28)	(1.61)	(1.28)	(1.61)	(1.35)	(1.41)	(1.35)	(1.41)
size:ln(MVE)	0.018**	0.017**	0.018**	0.017**	0.018**	0.017**	0.018**	0.017**
	(2.42)	(2.37)	(2.42)	(2.37)	(2.36)	(2.30)	(2.36)	(2.30)
BEME	0.108*	0.106**	0.108*	0.106**	0.108*	0.105**	0.108*	0.105**
	(1.96)	(2.28)	(1.96)	(2.28)	(1.95)	(2.25)	(1.95)	(2.25)
idiosyncratic volatility	0.077	0.178	0.077	0.178	0.088	0.191*	0.088	0.191*
	(0.52)	(1.55)	(0.52)	(1.55)	(0.61)	(1.77)	(0.61)	(1.77)
News negative [-10.0]					0.003	-0.002	0.003	-0.002
					(0.52)	-(0.43)	(0.52)	-(0.43)
News positive [-10.0]					0.002	0.007	0.002	0.007
					(0.40)	(1.11)	(0.40)	(1.11)
constant	-0.107	-0.094	-0.107	-0.094	-0.107	-0.096	-0.107	-0.096
	-(1.40)	-(1.29)	-(1.40)	-(1.29)	-(1.43)	-(1.34)	-(1.43)	-(1.34)
N	172	172	172	172	172	172	172	172
AdjR2	0.355	0.427	0.355	0.427	0.348	0.423	0.348	0.423

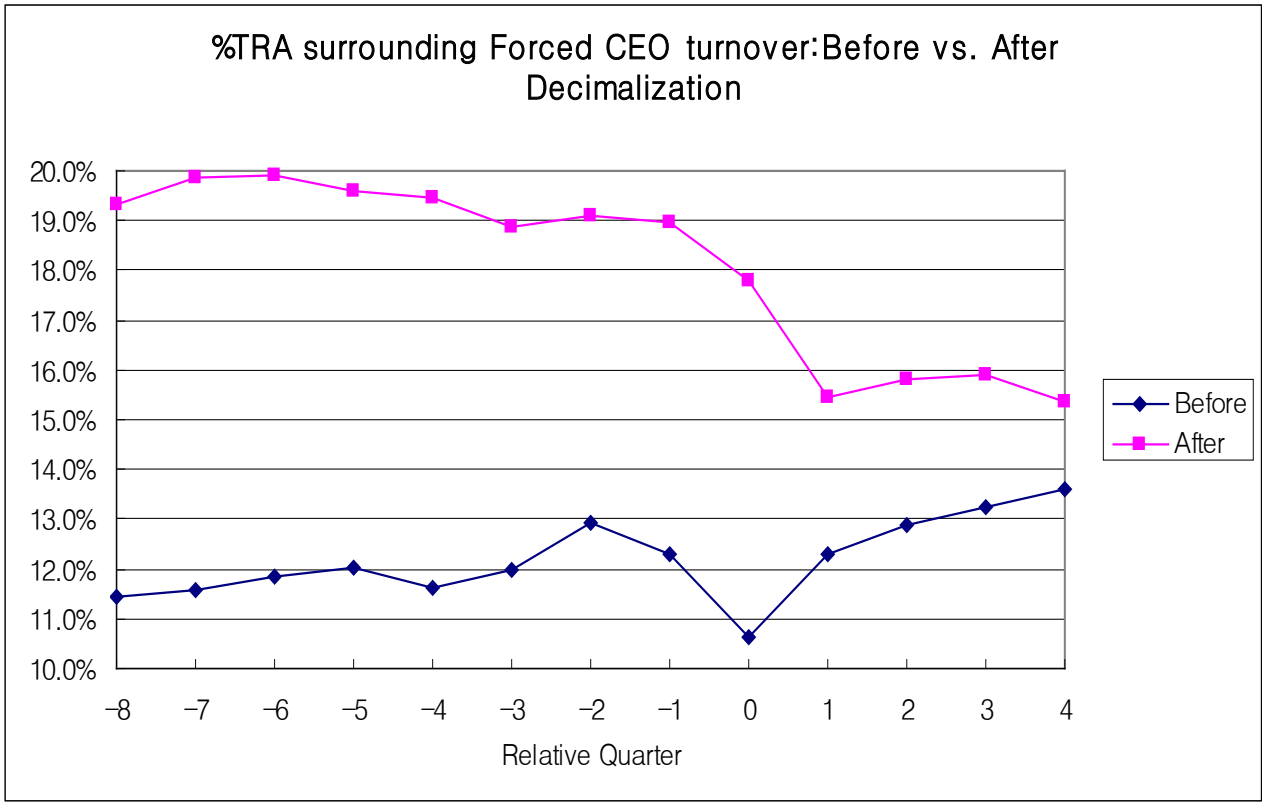
Table 3.9
Change of R&D Margin and ROA after CEO dismissals

The dependent variable of the first column is the R&D divided by the revenues in year t+2 minus the R&D margin in year t+1, where t is the fiscal year immediately prior to the forced CEO turnover. The dependent variable of the second column is the operating income before depreciation and amortization (OIBDP) divided by total assets (AT) in year t+2 [i.e., ROA] minus the ROA in year t+1, where t is the fiscal year immediately prior to the forced CEO turnover. The sample is the firms whose announcements of a CEO dismissal is not confounded by any other major corporate event (please refer to the caption of Table 6) and the firms that have non-missing R&D expenditures in Compustat. The t-statistics are displayed in parentheses on every second line. Standard errors are clustered at the firm level and year level using Petersen (2009). The *, **, and *** represent statistical significance at the 10, 5, and 1% levels, respectively.

Dependent Variable:	ΔR&Dmar	ΔROA
Fiscal year after CEO fired:	t+2	t+2
%TRA	0.115	-0.251
	(1.28)	(-1.59)
1{AD}	0.04 ***	-0.031
	(3.01)	(-0.85)
1{AD)*%TRA	-0.195 **	0.378 *
	(-2.30)	(1.93)
R&Dmargin(t)	-0.215 **	
	(-2.53)	
ROA		-0.117 **
		(-2.18)
Log(MVE)	0	0.002
	(0.07)	(0.22)
Idiosyncratic Risk	0.701	-0.164
	(1.50)	(-0.16)
1{Outsider}	0.007	-0.015
	(0.61)	(-0.80)
Constant	-0.05	-0.063
	(-1.16)	(-0.40)
Industry FE	Yes	Yes
N	110	110
Adj.R2	0.536	0.192

Figure 3.1
Comparison of the level of transient institutional ownership surrounding forced CEO turnover, before and after decimalization.

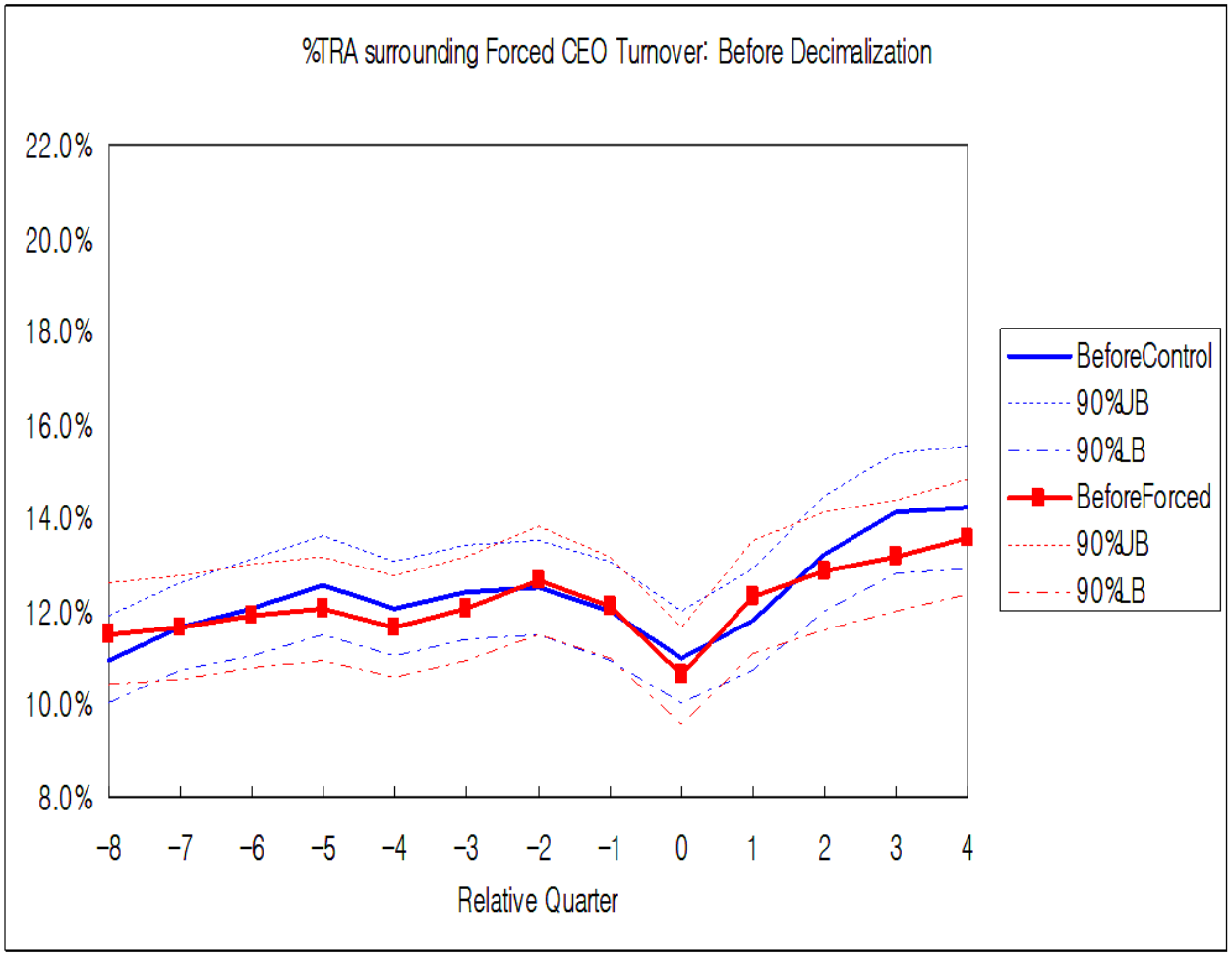
Panel A. Level of transient institutional ownership before versus after decimalization for event firms



N(before)=195, N(after)=260. Relative quarter zero is the quarter ended immediately prior to the CEO dismissal.

Figure 3.1 Continued-1

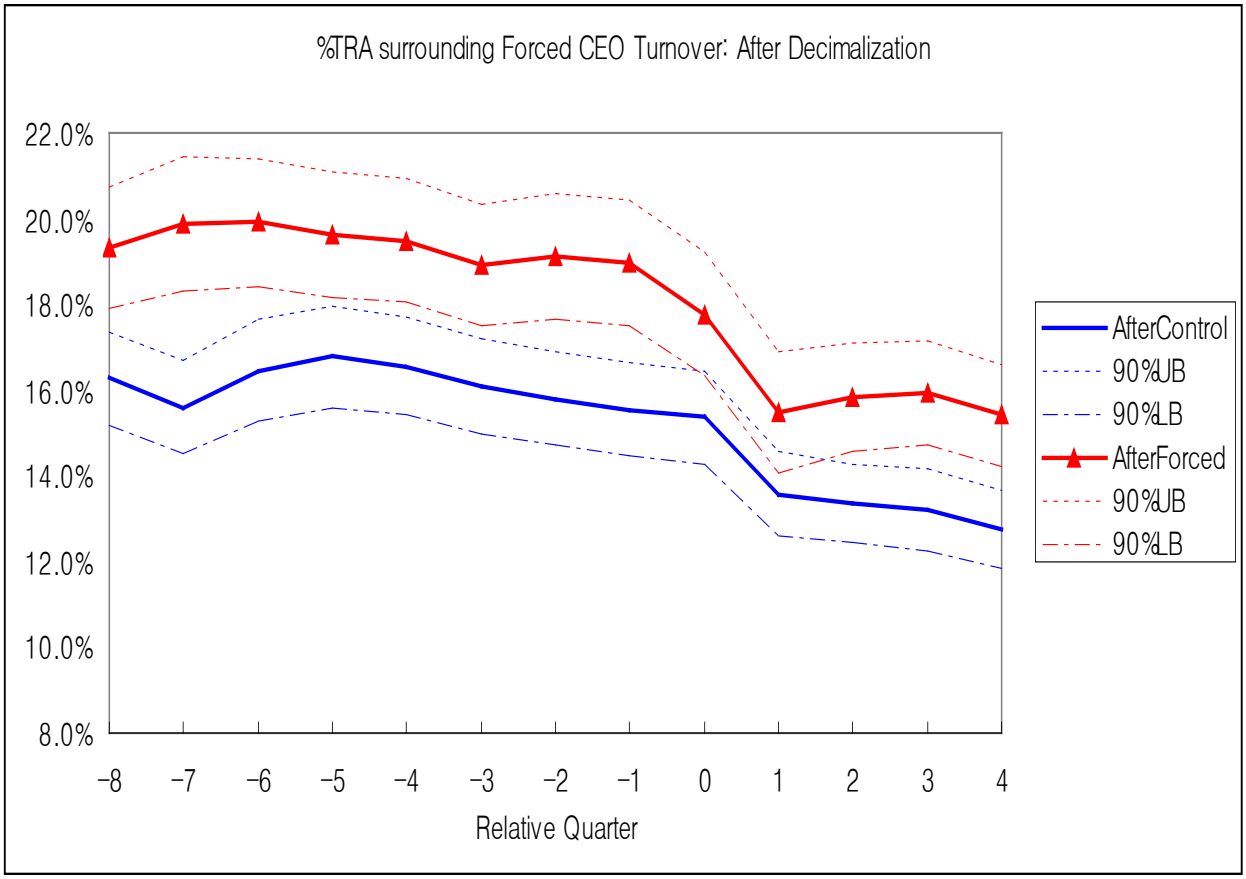
Panel B. Level of transient institutional ownership for event firms & control firms BEFORE decimalization



N(before, control) = 231, N(before, event) = 195. Relative quarter zero is the quarter ended immediately prior to the CEO dismissal.

Figure 3.1 Continued-2

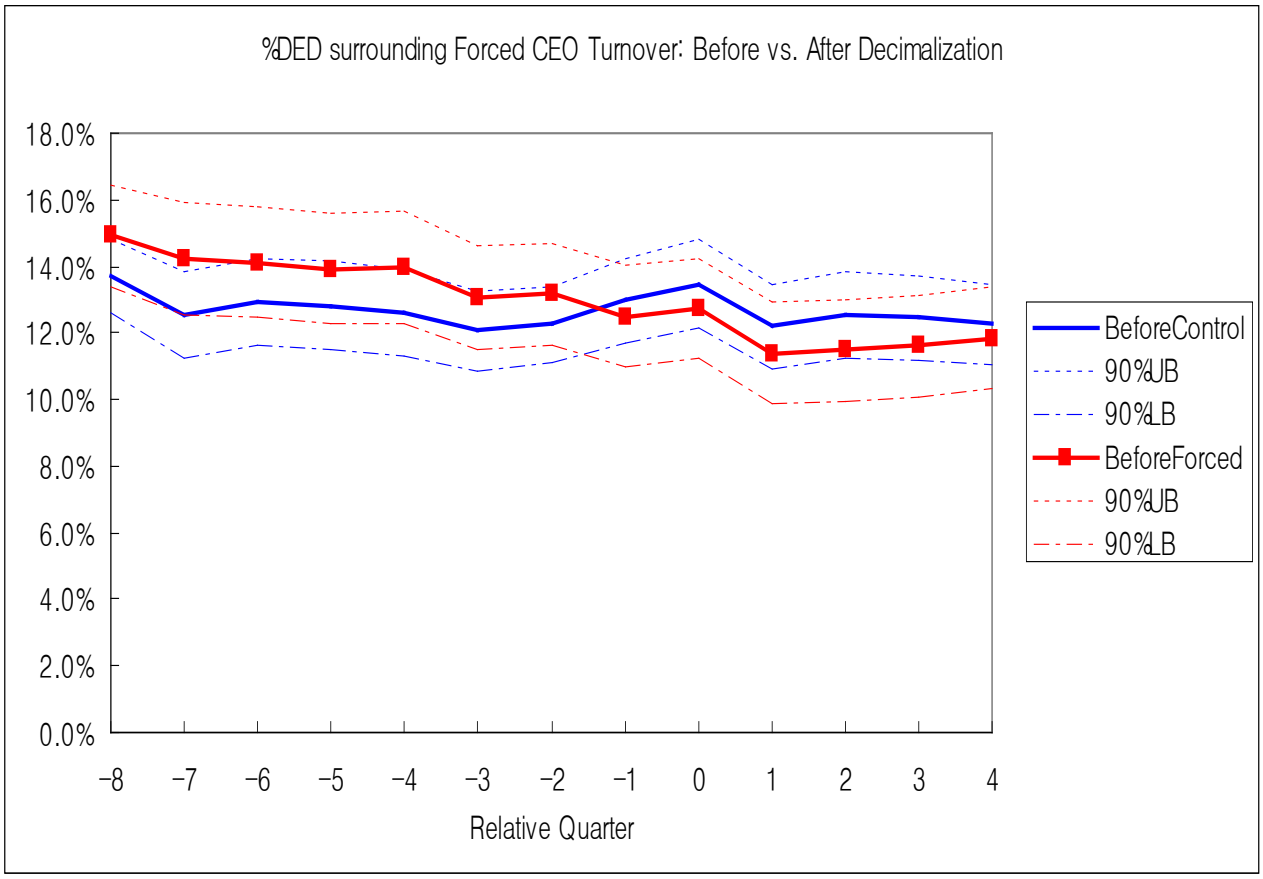
Panel C. Level of transient institutional ownership for event firms & control firms AFTER decimalization



N(after, control) = 298, N(after, event) = 260. Relative quarter zero is the quarter ended immediately prior to the CEO dismissal.

Figure 3.2
Comparison of the level of dedicated institutional ownership surrounding forced CEO turnover, before and after decimalization.

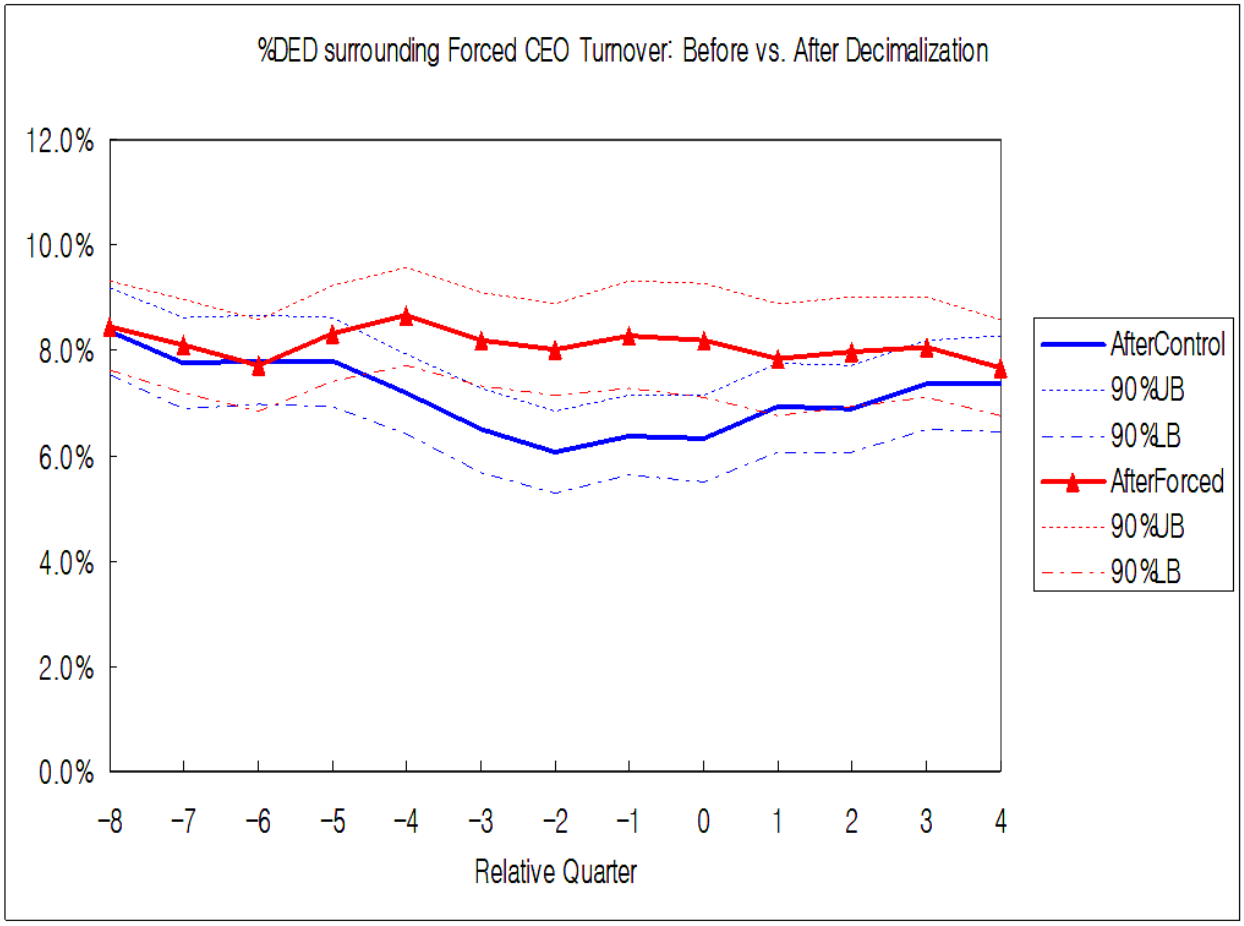
Panel A. Level of dedicated institutional ownership for event firms & control firms BEFORE decimalization



N(before, control) = 207, N(before, event) = 172. Relative quarter zero is the quarter ended immediately prior to the CEO dismissal.

Figure 3.2 Continued

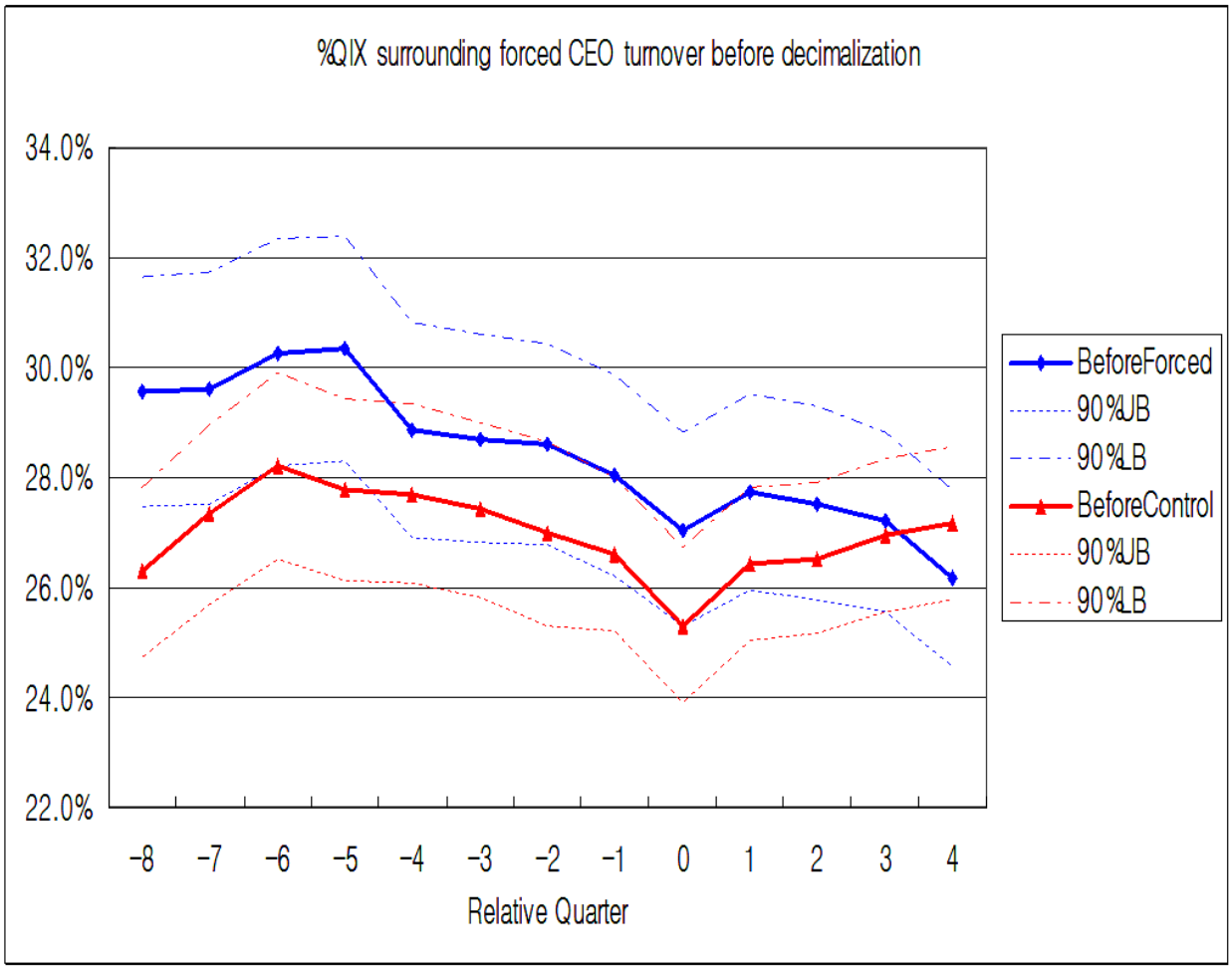
Panel B. Level of dedicated institutional ownership for event firms & control firms AFTER decimalization



N(after, control) = 220, N(after, event) = 190. Relative quarter zero is the quarter ended immediately prior to the CEO dismissal.

Figure 3.3
Comparison of the level of quasi-indexer institutional ownership surrounding forced CEO turnover, before and after decimalization

Panel A. Comparison of the level of quasi-indexer institutional ownership for event firms and control firms BEFORE decimalization



N(before, control) = 234, N(before, event) = 196. Relative quarter zero is the quarter ended immediately prior to the CEO dismissal.

Figure 3.3 Continued

Panel B. Comparison of the level of quasi-indexer institutional ownership for event firms and control firms AFTER decimalization

N(after, control) = 299, N(after, event) = 259. Relative quarter zero is the quarter ended immediately prior to the CEO dismissal.

Figure 3.4
Market median illiquidity

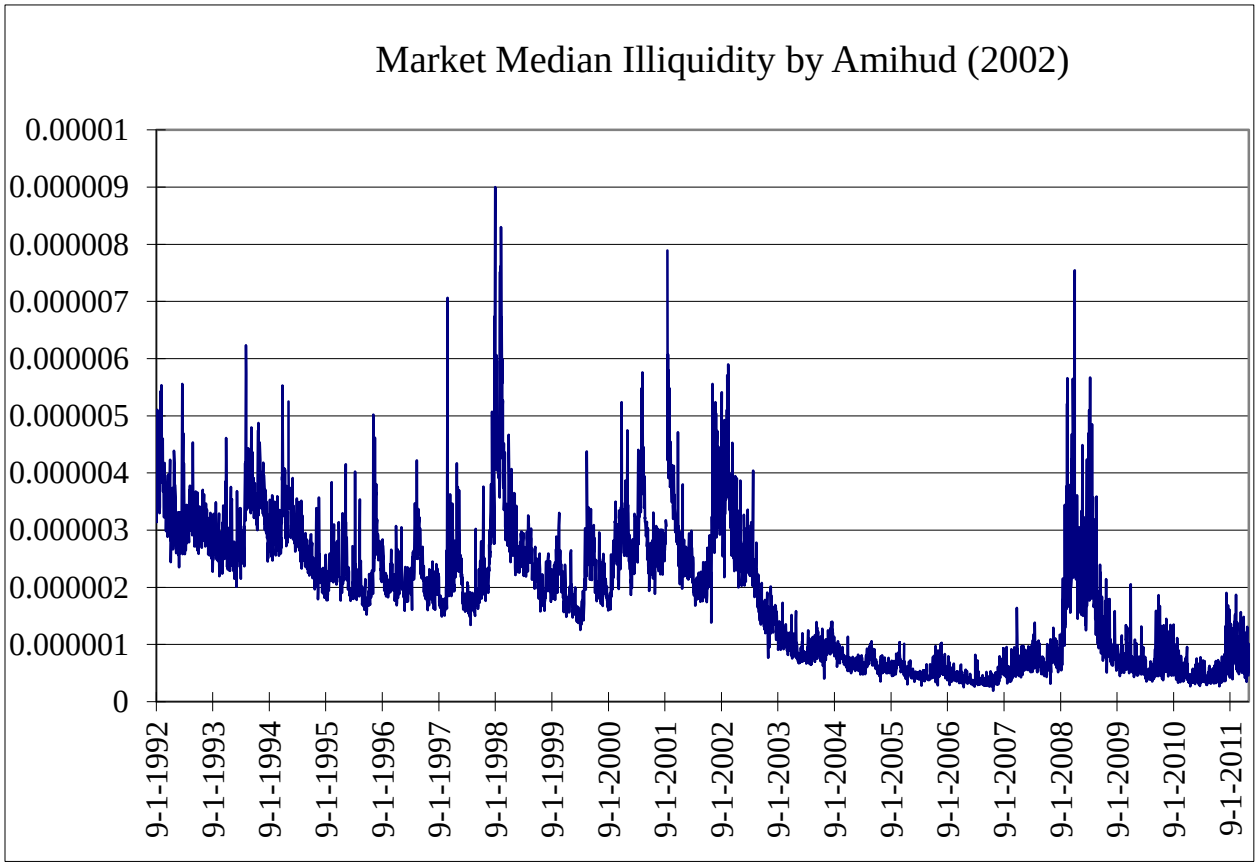


Figure 3.5
Abnormal returns around forced CEO turnover announcement day

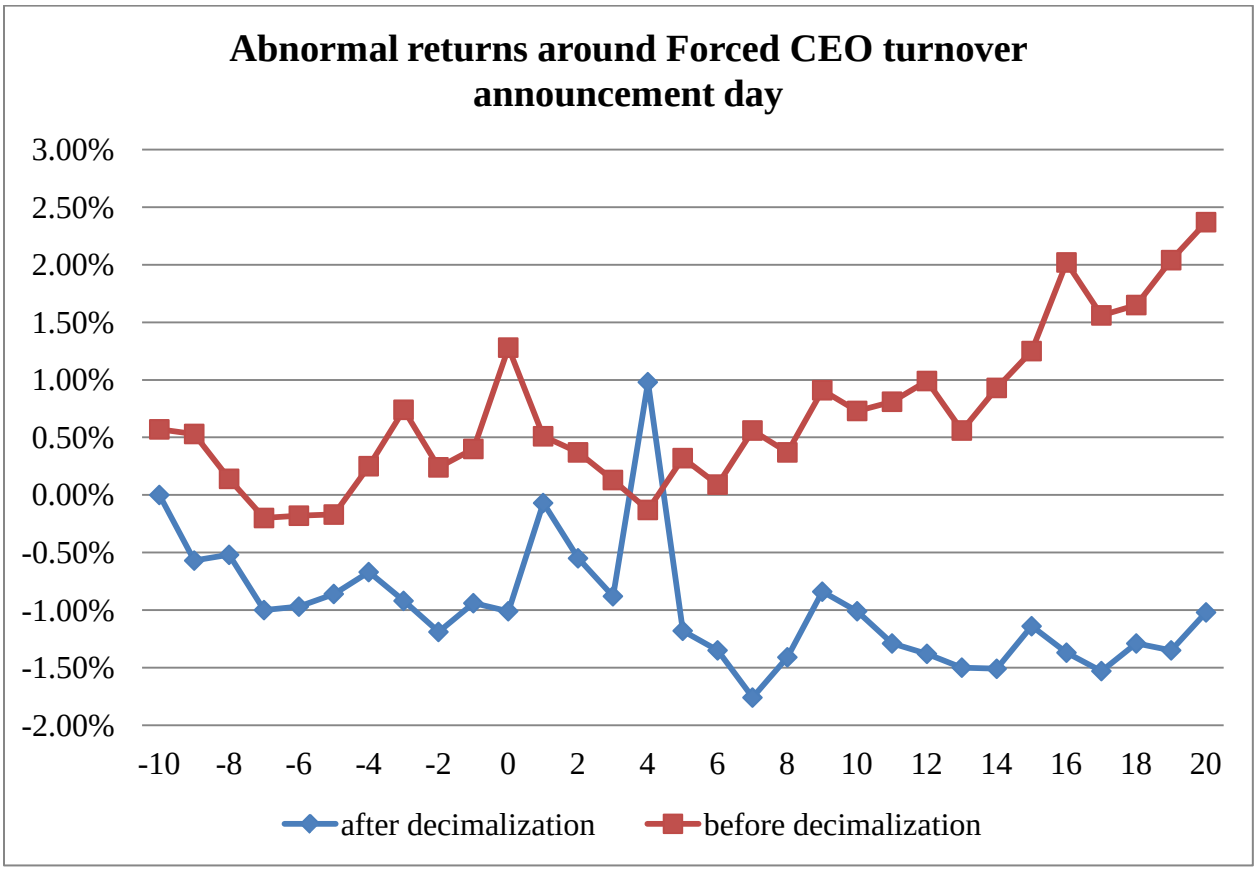
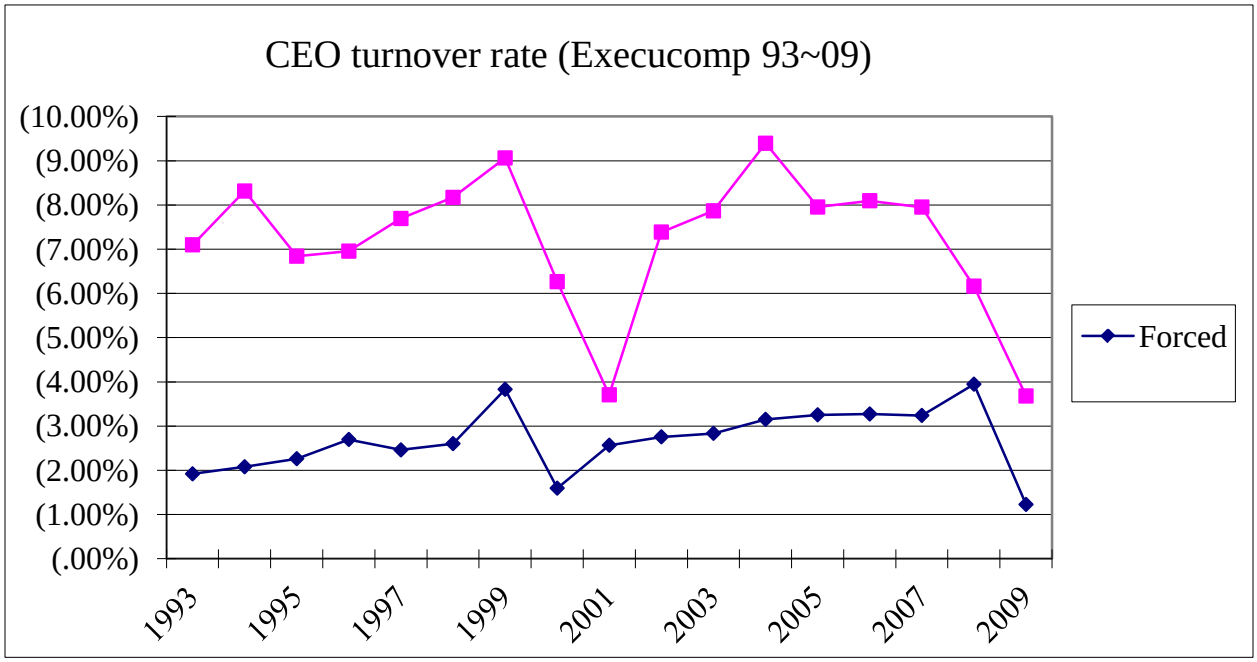


Figure 3.6
CEO turnover rate during the sample period



*Horizontal axis: fiscal year

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